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## ESSAYS, MONOGRAPHS, AND CASES.

*A History, Chronological and Circumstantial, of the Visitations of Yellow Fever at New York.* By JOHN H. GRISCOM, M.D., Physician to the New York Hospital; Fellow of the New York Academy of Medicine.

(Read before the Academy of Medicine, and printed by permission.)

The history of the epidemic diseases of North America dates back to the commencement of the 17th century. It is related in a dedicatory epistle of a sermon delivered by Elder Cushman, at Plymouth, in 1620, just after the Colony arrived, that,

1618-19. "They, (the Indians,) were very much wasted of late by a great mortality that fell amongst them *three years since*, which, with their own civil dissensions and bloody wars, hath so wasted them, as I think the twentieth person is scarce left alive." "It raged in winter, and affected the Indians only."

Noah Webster, in his work on Pestilence, attempts to decide that this pestilence was the fever which has since received the appellation of "yellow fever;" his reliance for this opinion being the statement of Gen. Gookin, as follows: "What the disease was which so generally and mortally swept them away, I cannot learn. Doubtless it was some pestilential disease. I have discoursed with some old Indians that were then youths, who say that the *bodies all over, were*

*exceeding yellow*, (describing it by a yellow garment they showed me,) both before they died and afterward."

That this was not small pox, (a frequent scourge of the aborigines,) is evident from several circumstances; but the basis (above cited) for the inference that it was Yellow Fever, is too slight, especially when we remember what Webster ignores, that it raged *in winter*, which Yellow Fever never does, at least in Northern latitudes. It was most probably a malignant typhus, with bilious complications, jaundice, and nasal hæmorrhages, of paludal origin. Gookin wrote 40 or 50 years after the settlement of New England.

The same destructive principle devastated the settlers of Virginia, destroying 300 of them in 1619.

1632-37. America, as well as Europe, was severely annoyed by pestilential diseases. In 1633, a "pestilent fever" invaded the little Colony of Plymouth, carrying off 20 of their number.

1668. Malignant diseases again prevailed in America, and the first mention is now made of New York, at which time the epidemic was so fatal, that a fast was appointed in September, on that account. This was possibly the "autumnal bilious fever, in its infectious form."—*Webster*, vol. 1, p. 202.

1695. A mortal sickness prevailed among the Indians in the Eastern parts of this Continent, and a contagious sickness prevailed in Bermuda in the same year.

1699. This malignant fever, whatever might have been its symptoms, was followed by more general sickness. In this year, there raged in Charleston, S. C., and in Philadelphia, the most deadly bilious plague that probably ever affected the people of this country up to this period. It commenced in Philadelphia, about the first of August, and was called the "Barbadoes distemper." "The patients vomited and voided blood;" 220 persons died of it, of whom 80 or 90 belonged to the Society of Friends. No mention is made of its appearance in New York.

1702. The American plague, as it is called by some writers—meaning, doubtless, the Yellow Fever—raged severely in New York, to such a degree that scarcely a patient survived it; and, by some accounts, it was more fatal than any disease since that period. It was popularly known as "the great sickness." One account states that 500 died up to September, and 70 more during the succeeding week, in a population of only 6,000 or 7,000. On account of it, the Assembly was held at Jamaica, Long Island. It was said to have been imported from St. Thomas.

1719-20. A malignant pleurisy prevailed in some parts of America; and in 1720 the village of Duck Creek, in the State of Delaware, was almost depopulated by some disorder, the name or character of which is unknown.—*Webster*, vol. 1, 227.

1723. What was denominated a "burning ague," prevailed in Rhode Island, which, in proportion to its patients, was never exceeded in mortality in America.—*Idem*, 228.

1732. In the autumn, in New York, there raged a malignant infectious fever, of which died 70 persons in a few weeks.—*Idem*, 341.

In the same year the "American plague" prevailed at Charleston, South Carolina.

1741. The "American plague" appeared in Philadelphia and Virginia.

1742. A mortal fever prevailed in Holliston, Massachusetts, of which died Mr. Stone, the minister, and 14 of his congregation.

1743. New York was severely afflicted by the bilious plague, where died in one season, 217 of the inhabitants—a considerable number for the population, which was 7,000 or 8,000. "According to Mr. Colden, in a paper written in this year, it appeared chiefly in parts of the town which were built on swampy ground, from which the water could not be easily drained, and there was a filthy smell from the slips."

This year is interesting, for having been, as far as our information extends, the date of the first official report of the mortality of this city, which was made by the Mayor, John Cruger. The whole report is as follows:

"*New York*, October 24, 1743. By the Mayor of the city. An account of persons buried in the City of New York:

From July 25 to Sept. 25, 1743.	From Sept. 25 to Oct. 22.
Children..... 51	Children ..... 16
Grown persons..... 114	Grown persons..... 36
165	52
	165
	217

"And I do find, by the best information I have from the doctors, &c., of this city, that the late distemper is now over.

JOHN CRUGER, Mayor."

*Idem*, 238.

1745. A malignant bilious fever prevailed in *New York*, of which

an eminent physician, Dr. Nicoll, died. "There appears to be no question that it was the same disease now called Yellow Fever."—*Idem*, 341.

In the same year, an infectious fever prevailed in *Boston*. The Yellow Fever prevailed in *Charleston, S. C.*; and *Stamford, Ct.*, was distressed by a malignant dysentery, which swept away 70 inhabitants out of a few hundred.—*Idem*, 239.

About the same time (the precise year is not known) a malignant epidemic disease laid waste the *Indian tribes*, which, from the descriptions given by the traders, would appear to be, though it probably was not, the infectious Yellow Fever. In consequence of it, the Senecas removed their quarters two or three times in a few years. The disease was said to have been confined to the Indians, the white people living and trading with them not being affected.

1746. The *Mohegan tribe*, between *New London* and *Norwich*, were wasted by the same malady. From an account given by a Mohegan priest, "a man of good sense and integrity," as related by a Mr. Tracy, son of Dr. Tracy, of *Norwich*, who attended them as a physician, and was the only white man affected, the following were the symptoms of this disease: The patient first complained of a severe pain in the head and back, which was followed by fever; in three or four days the skin turned as yellow as gold; a vomiting of black matter took place, and generally a bleeding at the nose and mouth, which continued till the patient died. 100 of the tribe died.—*Idem*, 341.

*Albany* was this year visited by a malignant disease, called by *Colden*, a nervous fever, and by *Douglass*, the Yellow Fever. The bodies of some of the patients were yellow: the crisis of the disease was the ninth day; if the patient survived that day, he had a good chance for recovery. The disease left many in a state of imbecility of mind, approaching to childishness or idiocy; others were afterwards troubled with swelled legs. The disease began in August and ended with frost, after having carried off forty-five inhabitants, mostly men of robust bodies.—*Idem*, 239.

It was reported that a like disease prevailed in *New York*, and that it had been imported in a vessel from *Ireland*, but we find no account of any such.

1747. A bilious plague prevailed in *Philadelphia*, and, with a slight mortality, also appeared in *New York*.

1748. It appeared in *Charleston, S. C.*

1761. Again appeared in *Charleston*; and it was about this time that the office of Health Officer was instituted, but what gave



occasion to it was the arrival, in 1758 or 1759, of a ship crowded with Germans, in a very sickly state.

1762. It appeared in *Philadelphia*. The summer was extremely hot.

1776. The Mohawk Indians were scourged by a malignant disease.—*Idem*, 342.

1778. A bilious plague occurred in *Philadelphia*.

1780. A bilious remittent fever prevailed in the same city, which, from some peculiar symptoms, received the soubriquet of "break-bone fever."

1783. A bilious pestilential fever occurred at Fell's Point, Baltimore, and sporadic cases in various parts of the country. Almost a whole family in New Jersey perished by it in the autumn.

"It is to be remarked as a striking and interesting fact, that during the eight years' War of the Revolution, no Yellow Fever appeared in the United States.—*Idem*, vol. 2, p. 75.

1791. In New York, the Yellow Fever prevailed in Water Street, in the autumn, in the neighborhood of Peck Slip, which was loaded with every kind of filth. 200 died of it.—*Med. Rep.*, vol. 1, p. 305.

1792. There was little or none in New York, though it occasioned considerable mortality in Charleston, carrying off patients in 3 days.

1793. There was none amongst us but a few solitary cases imported from Philadelphia, the alarm from which was lost in the unfortunate individuals who had brought it from its source.—*Dr. V. Seaman*, *Idem*, 305.

But in *Philadelphia*, in this year, the Yellow Fever spread terror and dismay over the city, sweeping into the grave 4,040 of the inhabitants. A controversy arose among the physicians in Philadelphia relative to its origin, one party tracing the disease, as they supposed, to infected vessels from the West Indies, and the other ascribing it to exhalations from damaged coffee, and filthy streets,—a controversy which was marked by great acerbity, and the unhappy schism which it produced among the citizens generally, as well as the profession. The summer of this year was very hot, after a dry spring.

In illustration of the popular sentiment (at least in the rural districts) respecting another mooted question connected with this disease, viz., its contagiousness, we may be permitted to introduce here, as à propos to the epidemic under consideration, an anecdote from a MS. Autobiographical Sketch of a late professor in one of the Medical Schools of this city. In 1793 he was a student in Philadelphia, and says he, "we had made a pleasant commencement, and just begun

to relish our new pursuit, when the yellow fever, which proved so calamitous in that year, made its appearance. Our school was rapidly thinned by the removal of the inhabitants to the country. I continued until no one but myself remained, and until my teacher himself was seized with fever and confined to his bed. He considered his recovery, I apprehend from the beginning, to be doubtful, and furnishing me with the outlines of his will, desired me to prepare it in due form. Having assisted him in signing it, and perceiving him to be very ill, I was induced, although very desirous to remain with him and assist his wife in nursing him, to yield to their advice and leave the city. \* \* \* I embarked in a sloop for Alloway's Creek, and spent one night on the water, and on the following night I was seized with a heavy chill, followed by high feverish excitement, which was considered as an evident attack of the disease from which I fled. My parents, 8 miles distant, were informed in the morning of my situation, and no time was lost in sending for me. By gentle and cautious travelling, I reached home without being injured by the journey, and found in an airy upper room, and in the faithful nursing of a tender mother, the most grateful auxiliaries to a restoration, which could possibly operate through the medium of the mind and affections.

"My situation excited much sympathy in the Town of Salem, (N. Jersey,) where I was pretty well known, and the attendance of my physician, who resided in the town, was very assiduous, until the fears of the inhabitants for his and their own safety, laid him under a positive interdict, as I grew more and more ill, no longer to enter my room or to go inside of the house. The very atmosphere of our dwelling was considered to be infected, so that travellers along the road, apprised of my illness, would climb over the fences and make a wide circuit, to avoid the danger. But my physician, Dr. Rowan, deeply interested in the case, and touched, I believe, by real sympathy and friendship for the family, though prohibited from seeing me, or coming to the house, continued his daily journeys to a tree above a quarter of a mile distant, where he met my father, learned the symptoms, and prescribed what he thought best. The disease terminated in a dysentery, which being suitably treated, I began rapidly to recover, and was soon restored to health."

1794. Twenty or thirty cases occurred in New York, occasioning considerable uneasiness in the minds of many of the citizens. According to Dr. V. Seaman, in a communication of Sept. 11th, to "the Committee for preventing the introduction of Contagious Diseases," which met regularly, "most of the patients that had been,

or then were, affected with dangerous fevers, were either such as resided in the neighbourhood of the slips, (which then were or lately had been cleaning out,) or whose employment led them to frequent those places." Its chief locality was the vicinity of New Slip, (foot of James Street.) During the very time that these persons were taken sick, the MUD TURTLE, as the machine was called, "was performing its pestiferous purgations in this filthy slip."—*Idem*, p. 306.

In *Philadelphia*, in this year, from 70 to 100 died of this disease, and on the 10th of June it made its appearance in New Haven, Ct., attributable, according to some, to local causes, and according to others, to foreign origin.

1795. Yellow Fever again made its appearance in New York, carrying off 730 persons, at least 500 of whom were foreigners, (452 belonged to one Catholic congregation,) most of whom had been so short a time in the country, that the pastor, Rev. Mr. O'Brien, did not know them.

The first case that attracted public attention, was Dr. Treat, Health Officer of the port, who fell a victim on the 29th of July. It is alleged, however, that 14 days at least, before the death of Dr. Treat, a man in the hospital died of a similar fever, and that another case, a blacksmith, was visited by Dr. Pitt Smith, with a similar disease, early in July. The evidence is, however, clear that Dr. Treat, himself, imputed his final sickness to communication from the sick and dead whom he visited on ship board, especially to the corpse of one which he assisted to bury on Governor's Island.—*Rev. Jno. McKnight, M. and P. Reg.*, vol. 3, p. 293.

It prevailed on the borders of the East River, in the low streets, and what was formerly the swamp, and in the narrow alleys. A small part only of the citizens fled; most of them remained and pursued their occupations in the greater part of the city, with perfect safety.

It occurred also in Norfolk, Va., both in this and the preceding and subsequent years.

1796. In New York, there had been built at Whitehall, the southern extremity of the city, a new dock, 60 feet into the river, with a front of 458 feet, the piles and timbers of which only, at this time, had been put down, forming an immense crib, having an area within of an average depth of 9 feet, and which, for a year past, had been gradually filling in with the accidental accumulations of all manner of filth, street dirt, dead animals, &c., &c. It was estimated to require 24,000 cart loads to fill up this dock, one-third of which, or

8,000 loads of perishable material, being above the ordinary height of the tides, was exposed to the action of the summer sun, while the balance of the mass was but slightly covered with water, at variable depths.

A somewhat similar condition of things was observable at Exchange Slip, foot of Broad Street, which was the receptacle of an extensive common sewer, with a great portion of its muddy bottom exposed at low water. In addition to these circumstances, the adjacent quarters contained a large number of old wooden houses, many of which, built before the raising and paving of the streets, had their lower floors two or three feet below the surface of the pavements; precisely such an arrangement as is observable at the Five Points and its vicinity, and some other parts of the city in the present year, 1856, showing how little wisdom three score years may produce.

It will surprise none to learn that 70 persons lost their lives by inhaling the poison evolved from such a seething mass of corruption. At the foot of Pine Street, and near Burling Slip, also, cases of Yellow Fever, if such it was, occurred, and four deaths occurred within fifty yards of the Roosevelt Street drain; and five others in adjacent streets. The disease did not become general, but was confined to the localities mentioned.

In Wilmington, N. C., it was preceded by dysentery, producing 150 deaths in 130 families. It also appeared in Charleston, S. C., in Newburyport, Mass., Boston, and Philadelphia.—*Med. Rep.*, vol. 1, p. 306. *Webster.*

1797. Yellow Fever appeared in Charleston, Norfolk, Baltimore, and in Philadelphia, where 1,000 persons died of it. 45 deaths occurred in Providence, R. I. It appeared to a moderate extent in New York, causing 23 deaths. Its chief locality then was East George (now Market) Street, and its vicinity. The first case occurred July 1. The patient was removed to the Lazaretto, on Bedlow's Island. Two of his next-door neighbors next fell under its power, and thence it extended itself through the most offensive parts of that offensive street; 10 of these cases occurring in the compass of 17 houses, and 12 around Fly Market, at foot of Maiden Lane.

1798. In the language of Webster, this year "was remarkable for the most general prevalence of the plague that has been known; and in some cities the disease was peculiarly malignant." It has been known since as the year of the "great epidemic." It will long be marked in annals of mortality, and it seemed as if, in the few years immediately preceding, the morbid influences of earth and air and

sky had been training for one grand, terrific, and universal onslaught upon civilized humanity.

The preceding winter was unusually long and cold. The month of May was dry, beyond many previous years. June was remarkable for numerous deluging rains, occasioning severe floods in the Connecticut, Delaware, and Susquehanna. Two or three of the first days of July were excessively hot, succeeded by 20 days of very cool weather, and then commenced a long period of the most sultry weather ever known in our climate, accompanied in some places with great rains.

In Philadelphia, the pestilence made its first appearance in June, increasing rapidly in July, and in August the city was deserted by three-fourths of its inhabitants. The disease was unusually mortal, and extended to the remotest parts of the city, where it had not formerly prevailed. The number of deaths there, was 3,440. At Marcus Hook, 57; Chester, 50; Wilmington, Delaware, 250; and it prevailed in other parts of that State, besides many deaths in Bridgetown and Woodbury, N. J. It showed itself also in Norwalk and Hartford, Connecticut.

It broke out in New York in the first week in August, in Front Street, between Old and Cœnties Slips, a place renowned for great accumulations of filthy substances. It disappeared from here, however, by the 26th of the month, in consequence of the active sanitary measures that were adopted, among the most important of which was the covering up of the nuisances with fresh earth.

On the 12th of August, the fever appeared in Water Street, foot of Dover, in an old broken building, where 11 had died in 1795; on the same day, corner of James and Batavia Sts.; also, 51 Cherry St.; 13th at Bruce's Wharf, (Pine Street,) and about the 20th it began to extend and assume a more formidable aspect. Its worst effects were observable in Cliff Street and that neighborhood, between John and Beekman. The aggravating cause in that locality was believed to be the fetid air from large quantities of spoiled beef, stored in the cellars in Pearl Street, on the windward side of this section. These cellars were filled with water by heavy rains, and even by high tides, and were always damp. The effect was augmented by large quantities of pickle, which, in the process of repacking, was discharged into the gutters and suffered to run into a sewer in Burling Slip, producing a very offensive smell. About the last of August, the inhabitants became greatly alarmed; some removed from the east to the west side of Broadway, but a great portion deserted the city. The disease

was unusually malignant, and exhibited frequent bubo and carbuncle.—*Webster*. The number of deaths from it was 2,086.—*Hardie*.

It carried off 200 in Boston. It appeared also in Portsmouth, N. H., in New London, Ct., where it destroyed 81 lives out of a population of 3,000. In one space in that city were 15 houses, inhabited by 92 persons, of whom all but two were attacked, and 33 died; and yet the locality is described as being as well built, clean, and airy as any street in the town.

It occurred in Salem, Mass., and in Albany, also, where about one-half who were seized, died.

In Port Elizabeth, N. J., a place of 19 dwellings and 97 inhabitants, there occurred 13 cases and 6 deaths.

It is a remarkable circumstance, (one which is quoted to sustain the doctrine of importation,) that while these northern cities and villages were sinking under its resistless fury, the Southern ports of Savannah, Charleston, Fell's Point, and Baltimore, were exempt from its ravages, although noted for their insalubrity in the autumnal season.\*

1799. It appeared again in Philadelphia and New York. In this city some cases occurred early in July, increasing in August, and attaining its height in September, and declining so much in October as to be nearly extinguished by November.

1800. In this year, the type of the disorder was so mild as to render the name of Yellow Fever of somewhat doubtful application, until towards the latter part of its brief season. It at first assumed the forms rather of irregular intermittent and remittent fevers; it did not commence its attacks until August, and a frost on the night of the 3rd or 4th of October, very soon destroyed the poison. Dr. V. Seaman relates, (*Repository*, vol. 4, p. 250,) "of upwards of 150 persons with this disease, where I attended, all of them, except one, resided (or else had stores, wherein they were occupied during the greater part of the day) either in Pearl Street, or between that and the East River. This one lived on the North River shore, but lodged in a bed that had been immediately before occupied by a sick person, who had been just taken with her complaint, after removing there from Cherry Street." Of these 150 cases, but one died; but Dr. Seaman witnessed a like termination in three others, whom he saw in consultation. Two of them became yellow, with brown dry tongues and coffee-ground vomiting, which sufficiently characterized the disease.

1801. In New York it commenced about the middle of September,

\* Currie. Am. and Phil. Reg., vol. 1, p. 189.

and by the last of October caused 140 deaths—besides, of 30 who were sent to the Marine Hospital, a considerable proportion died. Its localities were chiefly East Rutgers and Lumber Streets, where overflowing privies and corrupting offal abounded, as well as moral and physical uncleanness—the inhabitants being outcasts of bawdy houses and others of similar condition of life; and Front and Water Streets, between Coffee House Slip and Fly Market, a great part of which “was made ground, and underlaid and overspread with all that collection of nuisances which length of time and negligence of police could allow to be brought together.” The writers of that day state, that “no reasonable doubt could exist of its domestic origin.”

In this year also it prevailed in New Bedford, though limited to a small compass, the immediate vicinity of a vessel from Demarara, whose crew had been affected with it. The vessel lay at the foot of a dirty and ill-ventilated lane; 8 or 9 deaths occurred. All the persons who sickened had either been on board of her, or lived very near her. She contained a large quantity of damaged coffee.

A few persons died also at the port of Norwich, Ct., with yellow fever, but which, it is said, could not be traced to any arrival from abroad.

It prevailed also with violence, but not for a long period, at Norfolk, Va.; and at Charleston, S. C.

1802. Philadelphia lost 250 by yellow fever. It prevailed also in Baltimore; and in Wilmington, Delaware, where 86 deaths occurred, it was most severe in proportion to the population. 10 died in Portsmouth, N. H.; 96 in Charleston, S. C., (not one of whom was a native of Charleston,) and 60 in Boston. Notwithstanding this general prevalence in these seaports, and various other places, New York remained exempt, one death only being reported. In this year commenced the regular mortality reports, which have been, with more or less care, continued ever since.

The first of these was made out by an esteemed citizen, John Pintard, who argues their value in his peculiar quaint style, remarking among other suggestions, that “the progress of increase and population can be estimated by these tables, which, to be rendered more complete, ought to be accompanied by those of births and marriages. The melancholy back-ground of mortality ought to be relieved by the more cheering and enlivening scenes of nuptials and christenings.”

1803. It commenced in Philadelphia on the 19th of July, and in New York on the 17th. In the former place, it commenced at three different points on the Delaware side,  $\frac{1}{4}$  of a mile separate from each



other, within the space of 9 days, no communication whatever being traceable between the patients. A sudden and extensive depression of the thermometer lulled the disease for several days, when a reverse change occurred, the atmosphere becoming humid, warm and oppressive—a dreadful fire broke out almost simultaneously with this change in the elements, the concurrence of which circumstances relighted the pestilential flames, which continued with varying intensity until about October 20th—195 died of it. In reference to this epidemic in Philadelphia, Dr. Charles Caldwell remarks: "The shadows of night do not vanish more precipitately or certainly on the approach of the sun, than their dreams of importation recede from the touch of rigid inquiry."

In *New York* it commenced at Coffee House Slip, and was observed at the same time in several other parts. The weather during the greater part of July was intensely and uniformly hot, the thermometer being frequently above 90° and rarely below 80°, and the nights brought little relief to the oppressiveness of the day. The streets lying near the margins of the two rivers, and those inhabited by the poor, uncleanly and dissolute classes of the community, suffered the principal ravages of the disease. The deaths amounted to between 600 and 700.

It was more generally diffused than before. The 186 patients admitted to Bellevue Hospital were from fifty-seven streets, mostly on the east side of the city. Proofs of its domestic production greatly accumulated this year. One person was attacked in the Debtor's Prison, who had not been beyond its walls in 3 months.

In the village of Cattskill it prevailed severely, where it was attributed to the putrefaction of a large mass of fish; rigid inquiries, it is said, failed to establish any reason for belief in its importation from any other place.—Vols. 7 and 8, *Med. Rep.*

*Alexandria* was visited by it to a severe extent, commencing in July. The population of that place was estimated at upwards of 6,000, at least one half of whom left, and yet the number of deaths was upwards of 200. The evidence of a domestic origin of the disease in this place was alleged to be very clear; at least it is stated that there was no arrival of any vessel from abroad to which it could be traced, until 10 days after its first appearance there.—*Med. Rep.*, vol. 7, 190.

1804. The summer and autumn were distinguished by a singular mildness of temperature, and no malignant epidemic took place in any of the Atlantic cities.

1805. The temperature in the latter part of June, and till 20th of July, was oppressively hot, though a suspicious case of malignant fever occurred during the mild weather of the *early* part of June, in Roosevelt Street. The man recovered at the Marine Hospital, and no other case occurred until July 9th, when an ostler, recently from England, was attacked in a livery stable, in an alley in Maiden Lane. He died on the 13th day of the accession at the Marine Hospital; and two others belonging to the same stable, also recently from Great Britain, were taken ill with the same disease, but recovered at the Marine Hospital. The next case was on the 24th of July, in Water Street. The cases soon became more abundant, and were much dispersed over the city, though chiefly confined to the eastern side of the city, though it extended, by the middle of September, to the margin of the North River, and prevailed in Greenwich Street and the adjacent parts of the town, till the close of the epidemic. Six hundred cases were reported to the Board of Health. The number of deaths in the city, at Bellevue and Marine Hospitals, was about 300, exclusive of about 40 who died after their retreat into the country. 43 cases are stated to have occurred in the State Prison, (then in this city, at the upper end of Washington Street.) The Board of Health declared the principal seat of the prevailing disease to be that part of the city included between Burling Slip and Old Slip, as far west as Pearl Street, covering not more than 33 acres. De Witt Clinton was then Mayor and President of the Board of Health. One account states, that "no practitioner of physic in New York suffered any attack of this disease."

Between 300 and 400 deaths occurred from it in *Philadelphia*. It appeared also at New Haven, Providence, Newport, Norfolk and Charleston, and some sporadic cases in Boston and Baltimore, as well as in many other towns near, and at a distance from, the seaboard.—*Rep.*, vol. 9.

1806. "Though nothing approaching to an epidemic took place, several cases of Yellow Fever, highly and exactly characterized, were observed in the course of the season from June to November, in this city, and served to show what might have been reasonably apprehended from a more unfavorable course of the weather."—*Med. Rep.*, vol. 10, p. 214.

Two deaths by "malignant fever," only, are noted in the bill of mortality.—Vol. 11, p. 38.

1807. During this season only a very few sporadic cases of Yellow Fever were observed in the City of New York—not exceeding

20. Most of these occurred in September, or early in October. Four of them were in the New York Hospital.

In Charleston, S. C., it commenced about the middle of August, and proved fatal, by the 2nd of November, to 176 persons, who were almost exclusively strangers.

1808. The summer and autumn passed without any alarm of the malignant epidemic which, in so many previous years, had visited the Atlantic cities. This, and the two preceding summers were noted for their remarkably moderate heat.

An exception to the general exemption of the American cities from Yellow Fever was experienced by the small town of St. Mary's, on the river of that name, which then formed a portion of the southern boundary of the United States. This town was nearly depopulated by the disease.

The question of the *prime source* of the disease in this instance, would appear to be clearly settled on the side of *importation*. During the spring and summer the town was (as usual) remarkably healthy. During the latter end of August and first part of September, there were continued heavy rains, which filled the low grounds, and the water lay on the surface for some time; the wells were full to the surface, and the water became bad and offensive, yet no change in the health of the inhabitants occurred till September 5th, when a coasting packet, which was employed in carrying corn and a variety of provisions between that place and Savannah, and was in a distressingly foul state, arrived with two sick sailors, one of whom died in a few hours, and the other lingered for some time. A white citizen and a free black, both of whom attended these sick sailors, died—the first on the 9th, and the other on the 10th. The fire thus lighted, spread rapidly, fed by the state of the ground, a quantity of rotten provisions stored by speculators and smugglers, and the exceeding neglect of the health officers and police of the town.

A census taken the year before, showed a population of 350 whites and 150 blacks. By the 2nd of October, not more than 100 whites remained, sick or well; of this number, upwards of one-half died.

There were in the town about 30 French people, who were very useful in attending and relieving the sick, not one of whom had the prevailing fever.

The difference of mortality between the whites and blacks was also a remarkable circumstance.

Of 87 whites taken sick, 42 died.

Of 45 blacks taken sick, 3 died.

The exemption of the French residents was attributed to their mode of living, their diet being entirely very light food, vegetables, and thin gruel, and no flesh meats; their drink, lemonade.

Doubtless the light mortality of the blacks might be due to similar circumstances.—*Med. and Phil. Reg.*, vol. 3, p. 417.

1809. The city of New York remained free from malignant fever, but the neighboring village of Brooklyn suffered from it. It appeared there early in July, and continued in a greater or less degree, till late in September. Between 30 and 40 persons died of it, and nearly 20 persons were attacked in this city who had been exposed to the noxious air of Brooklyn—to a large portion of whom it proved fatal. This attack occurred in a season of unprecedented mildness.

It appears to have commenced at the margin of the water, and was confined to a circle of 200 yards, semi-diameter, from a ship (*Concordia*) which had recently arrived from Havana, the first patient being one of the hands of said vessel—Havana being infected with Yellow Fever at the time of, and four months previous to, her departure.\*—*Med. and Phil. Reg.*, vol 1, p. 101.

Eight cases occurred at Charleston, S. C., amongst strangers, all of whom died, and a few sporadic cases were seen in *Philadelphia*.

1810–18. The city of New York appears to have been entirely exempt from all appearance of Yellow Fever, nor do we find any record of its occurrence in this vicinity, except in

1811, when it made its appearance at Perth Amboy, then an entrepôt of considerable importance. The Board of Health of New York appointed a committee consisting of Drs. Jos. Bayley, Jno. H. Douglas, and David Hosack, to investigate the facts respecting it. They proceeded to that locality and made a minute investigation, and reported four deaths from, and three other cases of, undoubted Yellow Fever, one of which subsequently died, with a few others of more

\* The advocates of the theory of the domestic origin of the disease on this occasion, attributed it to an extraordinary assemblage of nuisances in the lower parts of the town of Brooklyn, consisting of a variety of putrefying vegetable and animal substances, together with water lodging in many low, sunken places, and also that it was partly owing to the contents of the "Mud turtle," (a machine for cleansing docks,) being exposed for some days on the wharf of New Ferry, so as to be offensive to the neighborhood. It was satisfactorily shown, however, that no more filth was observable in that vicinity than for several years previous, and that the operations of the mud turtle were not commenced until fifteen days after the first case of Yellow Fever had occurred, and that the mud removed by it consisted of an innocent blueish clay, which was quite odorless.

doubtful character; and their conclusion was unanimous, confirmed by the judgment of the physicians and residents of the place, that there were no local causes to which the calamity could possibly be referred, and that it was derived solely from vessels from the West Indies, twelve having arrived from there between June 1st and the breaking out of the fever. It was traced more distinctly to two, the ship *Favorite* and the brig *Ocean*, both from Havana. Every case was traceable to these vessels, and none took the disease from them. Non-intercourse with Perth Amboy was declared by the authorities of this city and Philadelphia, until its disappearance thence was satisfactorily established.

1819. Old slip and its vicinity (the foot of William Street) was the scene of another irruption of the Yellow Fever, though to so moderate an extent as scarcely to deserve the title of an Epidemic. It was confined almost exclusively to the vicinity of its first appearance. Out of 57 cases, 34 or 35 occurred in a single block, on the West side of Old Slip, between Front and Water Streets. It was a space anciently called "Rotton Row," where long and contested claims between the Corporation and the estates of some private individuals prevented the ordinary improvements, which might have purified or renewed the ground. The slip then extended as high as Front Street; (it is now filled and paved up to the Eastern or outer line of South Street;) was shallow, and its sides, like many others, composed of wooden piles, thick, uncovered, rotten, worm-eaten and coated with black mud, which, besides being the receptacle of the animal exuvie and decayed matter, which naturally accumulated in such a place, from the surface, was likewise the place of disembogement of a private sewer, which extended up to Pearl Street, across Hanover Square to Sloat Lane.

Of 83 persons sent to Fort Richmond, on Staten Island, which, with the consent of the Government of the United States, was occupied by the poor of New York, under the care of the city authorities, ten were taken sick with the disease, and three of them died in the Marine Hospital. It commenced on the 5th of September. The district, extending from Coenties Slip up Pearl Street to Wall Street, and down Coffee House Slip to the river, was fenced in, was declared infected, its inhabitants urged to remove from it, and the shipping at its water front all sent away, and a strong guard appointed to protect the property, with a pledge of medical aid in case of sickness, and a liberal remuneration. Whole number of cases reported, 63; deaths, 38; besides a few others out of the city.

In Boston this year it also made its appearance, as well as in Baltimore and at Fell's Point, Charleston and New Orleans, at which latter place it was exceedingly severe. Of its degree of prevalence here and at the other places named we have no precise information, although at all of them, it is asserted, that it made its commencement in every instance, and continued its existence almost exclusively, at the margin of the water, in the immediate vicinity of the shipping.

1821. The yellow fever made its appearance in St. Augustine, a place the salubrity of whose climate and atmosphere are almost proverbial. Here it commenced about the first of September, and terminated near the close of December, within which time 140 were attacked, and 132 died.

1822. Heretofore, almost without an exception, this dreaded pestilence had selected as the scenes of its manifestations, those portions of the city of New York which lie along the borders of the East River. From Whitehall to Roosevelt Street, at various spots in different years, but, be it always remembered, in the immediate vicinity of the slips, and of course of the shipping, the yellow fever had its favorite localities, whence it spread, as from a centre, over areas varying in extent, from time to time, as circumstances favored its growth and diffusion.

The scene of its irruption was, however, now altered, and the opposite side of the city was for the first time to feel its blighting influences. And another important variation in the circumstances, (important in its bearing upon the question of domestic or foreign origin,) is now to be noticed, viz., the *condition* of these localities in relation to their power of producing the disease *de novo*.

In the vast accumulations of filth of every description, in the docks and slips, and in the depraved and vitiated position and character of the dwellings and inhabitants of the quarters heretofore infected, the advocate of the theory of the domestic origin of yellow fever found strong reasons for the faith that was in him, but the circumstances, as well the scene, are now changed.

In Rector Street—a narrow but short and rapidly descending street, commencing at Broadway, between two large and elegant churches, and in its brief descent to the North River having on either side but a few dwellings, and those occupied only by the most cleanly families, and crossing only two streets before reaching its other terminus, Greenwich and Lumber Streets, the former then for many squares the home of the wealthiest and most refined of the inhabitants of New York—in Rector Street, would the non-importer of yellow fever fail

to find so much as a square foot of soil capable of emitting the poison. On the 10th of July, two little girls, children of Mr. Reder, a cooper, having a shop on the corner and residing in Rector Street, next the corner of Washington, (which latter street then faced the river,) and a young man named And. Thomas, a clerk in a grocery on the opposite corner of the same streets, were attacked with symptoms which afterwards were distinctly recognized as those of yellow fever. One of the girls and the young man died on the 17th, the other girl recovered. On the 15th a son of Reder, aged 16, was attacked and died on the 22d. In a few days it showed evidences of expansion, but not, unfortunately, of attenuation or dilution; it soon gave proof that it could "spread undivided, operate unspent." From the spot where it began, it spread slowly and regularly in every direction. In less than a month it had mounted the declivity of Rector Street, half way to its summit, and stretched a considerable distance along Washington and Greenwich Streets, north and south. On the 19th of August, it showed itself in Cedar Street, and soon after in Liberty Street. By the 23d of August, it had reached the further end of Rector Street, on Broadway, which it now crossed, and descended Wall Street to New Broad Street, and passing down Garden Street, met the Wall Street current at the corner of Garden and New Sts. In the old Sugar House in Liberty St., next the old church, now Post Office, it proved very fatal. It finally ascended as far as the Park on Broadway, and swept the whole of that part of the city lying below Fulton Street. The former localities of the fever, Cænties, Burling, and Old Slips, though furnishing evidence of its existence there, were not affected till near the middle of September, and then gave comparatively few cases, doubtless in a great measure to be attributed to the general stampede of the inhabitants.

This was, however, not the only infected district. On the 16th of September, three cases were reported at No. 4 Lombard Street, (now Monroe Street,) and on the 20th, 5 cases occurred in Cheapside Street, (now Hamilton Street,) a short distance from and parallel with Lombard, but a remarkably cleanly street. This locality, as just stated, was a very cleanly and decent place, containing not more than 60 houses, and those not crowded—and was within a few hundred feet of Bancker Street, which was famous for being the very reverse in its physical and moral characteristic, and was the scene of a destructive local distemper of a peculiar nature three years previously.

And yet, while there occurred among the persons living in and



frequenting the former, 46 cases and 28 deaths, amongst the latter there was not one reported. The origin of the first case which occurred in this locality, which was at least half a mile from any part of the other infected district, is asserted by the historians of that epidemic to have been distinctly traced to exposure to the atmosphere of the latter.

The whole number of cases which were reported to the Board of Health as having occurred between July 10th and November 5th, when the disease terminated, was 415, of whom over 230 died. The precise number of deaths is not known from the records of the Board of Health, a large number of cases having been removed to the country, to the suburbs of the city, and to Marine Hospital. These figures would have undoubtedly been swelled ten-fold but for the voluntary desertion of that portion of the city by the wealthy, and the compulsory removal of others to distant places.

As to the source of the disease of this occasion, there appears no other mode of accounting for it than its introduction from Havana, by means of four cargoes of sugar, brought to the city from Quarantine, from vessels which were there detained in consequence of their infection with Yellow Fever, on two of which deaths had recently occurred. Between the 1st and 9th of July, twenty-four lighter loads of boxes of sugar were brought from these vessels at Quarantine, were landed at and near the foot of Rector Street, and stored in the adjacent warehouses. The first cases of Yellow Fever on shore, it will be remembered, occurred on the 10th July.

From 1822 until the present time, a period of 34 years, we have rested in repose from any serious apprehension of a visit from this dire enemy of our race—a most striking contrast with the thirty-four years immediately preceding, in which period there were seventeen visitations of it. And this is notwithstanding its continued prevalence from year to year in the Southern ports of the Union, and even last year coming so near to us as Norfolk, Virginia, where it prevailed with intense malignity.

The present year has not been without exciting apprehension among our citizens, in consequence of its abundant appearance at Quarantine, and its spread to a considerable extent over our sister city of Brooklyn, in aggravated imitation of its operations there in 1809; but, happily, we have escaped with only the few sporadic cases incident to our proximity to those scenes.

The history of the epidemic of the present year is yet to be written; we have not yet seen its conclusion.

With the questions which have so often and so deeply moved the intellects and feelings of both professional and non-professional men, in days of yore, viz., the contagiousness and the origin of Yellow Fever, your Committee have in this place no concern, any further than as we are instructed "to report upon its relations to the sanitary condition of the city in the present and past years;" and in concluding the task imposed upon us by the resolution of August last, we shall endeavor to satisfy the demands of public duty, by the presentation of a few general considerations, derived from the research which has resulted in the foregoing chronological outline.

Coming to this investigation as with the mind of a student, wholly unbiased, desirous of seeing only facts, and determined to be influenced by nothing else, we have found an abundance of that only true basis of philosophy; but in too many instances overlaid by so huge a mass of special pleading and perversion, as to satiate us, *usque ad nauseam*. If, as has been truly said, "History is philosophy teaching by example," how important is it that the facts, which alone make history, be examined and understood without prejudice or bias of any kind. In this spirit of impartiality we have endeavored to penetrate to the bottom of the well, in which the truth lies concealed, in order to present those rules of prophylaxis and defence most clearly indicated by the habits and laws of the disease in question, and from the facts pertaining strictly to the relations which it bears to the City of New York, to indicate the course which we think the medical profession and the public authorities should pursue.

Yellow Fever being a disease resulting from the infusion into the human system, through the respiratory and perhaps the cutaneous organs, of certain influences which are of a vehemently poisonous and deadly character, producing great perversion of function, and disorganization of fluids and solids, it is necessary to determine, in the first place, the source of the poison or the channels through which it comes to us. That it is invisible, intangible, and inodorous, will be admitted on all hands; that it is the product of combined terrestrial, vegetable and animal emanations, high temperature, and other peculiarities of certain latitudes and seasons, will be disputed by but few, if any; that it is a disorder of a peculiar type, as distinct from any other as small pox is from measles, any one of experience in diagnosis need but look upon it to be convinced. The question then arises, In what latitude and localities does it or can it originate? and this, as far as we are directly interested, brings us to the question, Has it ever originated or can it originate here at our own doors? Is any combination of terres-

trial and meteoric circumstances possible, in *this* latitude and climate, from which this venom can be evolved?

As just now stated, on this question your Committee are not called upon to *express* an opinion; and though they may entertain a decided view upon the subject, it is their duty to look upon it only in its relations to the public sanitary interests of this great city, and to recommend such a course as will best conduce to their preservation.

True history alone can solve this intricate problem. The domestic origin of the poison is asserted by numerous writers, and in many instances of proof quoted by them, reasons of plausible character, based upon apparently well-authenticated facts, are urged in support of their views. We say *apparently*, because at this distance of time, and in the impossibility of cross-examination as to the facts, we can only yield a passive acquiescence to many of their statements. And in view of the importance of the subject, prudence would also justify an acquiescence in the theory of its *possible* domestic production, *provided* always that we, at the same time, do not ignore the existence of the incontrovertible proofs of its importation from abroad, and the necessity of a vigorously enforced quarantine at whatever cost.

Such shocking collections of all that was vile and offensive, as we know to have existed in the numerous slips and docks, in the unpaved streets and alleys, and the crowded cellars of this city, in the latter part of the last, and the early part of the present century, were cause enough for miasmata of some kind, capable of sweeping off scores and hundreds of the people living adjacent; and whether the atmosphere of these localities was a direct provocative of yellow fever, or served only as a richly manured soil in which the germs of that disease, introduced from abroad, would grow with redoubled vigor, it matters not to us practically. It is enough to know that such conditions of things are inimical to human life, and should never be permitted. Sad experience has too often shown, that in them there exist, wanting only the proper time and temperature to leap into active life, the seeds of evils as numerous and pungent as Pandora ever dreamed of.

It is nevertheless at least a coincidence, that in such a depraved condition of its Eastern margin, New York sustained in 16 years, (from 1791 to 1807,) 13 attacks of yellow fever, causing the death of at least 5000 persons, and each time compelling the flight from their homes and occupation, of many thousands of the population. And it is another interesting fact, that since the year 1807, New York has been visited by it but twice, viz., 1819 and 1822, and the latter visitation was on the opposite side of the city, against which no

complaints of nuisances could be made; and the commencement of this period of exemption was moreover coeval with the enforcement of a law for the filling up of these slips, and the general improvement of those ancient haunts, in which the opponents of its importation so clearly saw the domestic source of the disease.

Whatever consolation, therefore, the advocates of domestic origin may derive from these facts, they are fairly entitled to, after we have stated some other remarkable coincidents which bear strongly upon the opposite doctrine.

The circumstance which was quoted from N. Webster, that during the revolutionary war our country was not visited by yellow fever, *he* would doubtless attribute to an interposition of Providence, though he does not hold so in express language. He speaks of it simply as a "striking fact," in the middle of his labored effort to prove the source of nearly all epidemics to lie in local domestic circumstances, in combination with meteoric influences, and the appearance of comets. A more rational solution of the circumstances may, we think, be found in the fact, that during the war nearly all foreign commerce was suspended.

In relation to the localities at which the fever invariably appeared, before 1822, attention has already been drawn to the fact, that they were upon the borders of the city, and of course in the immediate vicinity of the shipping, where importations of every kind were first received; while at the same time there existed in the centre of the city other localities, the receptacles of all manner of filth and nastiness, in whose neighborhoods the fever not only did not originate, but which were, in fact, exempt from its incursions when it prevailed elsewhere. Of these places the most noted was "the Collect," in Centre and Canal Streets.

The next coincidence to be remarked in the relations of this city to the yellow fever, is this, that it was not until the commencement of the present century that our Quarantine laws took a definite shape, and sanitary enactments were enforced with the vigor which now characterizes them. It was only in 1805 that infected vessels were prohibited from coming within 300 yards of the Island of New York, after being discharged of their cargoes; while the law of 1806 even restricts vessels from the West Indies and the Mississippi, arriving between June and October, to only 4 days' detention at Quarantine, and prohibits intercourse between their crews and the city of New York, except under regulations of the Health Officer. And since a year after that time, though yellow fever has frequently hovered along

our border, it has on but two occasions, up to the present year, planted its foot beyond.

These, then, are the premises from which, as conservators of the public health, we are to draw our conclusions of duty with respect to yellow fever:

1st. To maintain a thorough condition of cleanliness and purity in all the borders, and throughout all the interior of the city.

2d. By a rigid continuance of the Quarantine, to watch its approaches from abroad, and arrest its progress ere it reaches even our threshold.

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*Supplemental Report on Yellow Fever.*

(Read August 5th, 1857.)

In the Report on "Yellow Fever and its relations to the sanitary condition of the city in the present and past years," presented to the Academy of Medicine, in October last, by the *Section on Public Health and Legal Medicine*, a review was given of the different attacks which New York had experienced up to the year 1822, the date of its last appearance within the precincts of the city. The attack of 1856 being then incomplete, the account of its appearance and prevalence in that year was left for future consideration; so that, unbiased by any of the conflicting views of different parties, we might, when all the facts connected with its advent and progress had become winnowed out and established, arrive, if possible, at a clear, judicial understanding in relation to it. The Section propose now to complete the work assigned them, and believe that their fellow academicians will find in the facts and views which will be presented, an interest equal to their own.

The history of the manner of attack, and the extent of Yellow Fever in this vicinity, in 1856, have been detailed with great particularity in his report to the State Legislature, by Dr. Elisha Harris, then physician of the Marine or Quarantine Hospital. To this able document the Section refer for a more complete exposition of the facts connected therewith, while we shall content ourselves with a recapitulation of the main points, and a few remarks upon some of the questions which have agitated scientific circles respecting the circumstances which have controlling or modifying influence over the origination, communicability, and power of extension, of the disease.

The most recent theory respecting the relations of Yellow Fever to terrestrial and atmospheric circumstances, and which has arrested the

attention of medical minds in a powerful degree, is that advanced by the New Orleans Sanitary Commission of 1853.

The doctrine of the causes and controlling influences of Yellow Fever, as laid down by that able board of professional gentlemen, as understood by us, is as follows: 1st. That there must exist in the soil such a condition of animal or vegetable, or a combined animal and vegetable material, as by the decomposition thereof a malarious agency will be emitted, capable, upon being received into the human system, under proper circumstances, of developing that peculiar disease. 2nd. That in order to give efficacy to the poison power of this terrene malaria, a certain condition of the circumambient atmosphere is necessary; which atmospheric condition consists of a combination of two distinct elements, viz., a *high temperature*, and a *high degree of humidity*.

To illustrate this position, the report of the Commission employs the figure of the "Shears of Fate," of which, one blade represents the terrene, the other blade, the atmospheric circumstances. In the absence of one or the other of these parts, the remaining one is powerless. Thus, though the necessary terrene exhalations be ever so abundant, if the temperature of the air be not high enough, and the atmosphere does not contain a sufficient amount of moisture, Yellow Fever will not ensue; and, *vice versa*, if the temperature and moisture of the air are at their highest point, and there be no appropriate terrene emanations, no danger will exist. The shears are themselves shorn of their power; but one blade exists, a harmless instrument. But by a combination of all these circumstances—by upturning a deleterious soil, and exposing it to a tropical atmosphere replete with vapor, then we have every reason to apprehend the appearance not only, but also the epidemic prevalence of Yellow Fever.

Such is the doctrine enunciated by the New Orleans Commission, which they maintain has been verified in that city and other places; which has been given to the world in their elaborate and learned report, and which was last November boldly and eloquently proclaimed from this rostrum, by one of that commission's most learned members, Dr. E. H. Barton, as of sufficiently frequent observation to justify its establishment as a *law*.

The position thus assumed, is, if correct, one of vast importance—the only theory, in fact, ever presented of a really philosophical and practical character; and of sufficient amplitude to cover all cases; and, from the evidence adduced, seems justified, so far as the city of its birth is concerned. At any rate, it is not within our province, under

the resolution of last year, to criticise the theory as it relates to any other locality than our own; but it appears to be our duty to inquire into its applicability to the epidemic visitations of Yellow Fever to this city and vicinity, and to this extent, and by that light, we propose now to complete the labor assigned us by the Academy.

From the years 1791 to 1807, inclusive, this city experienced eleven attacks of Yellow Fever. It did not appear again till 1819; and all of these attacks had their locality on the southeastern margin, in the vicinity of the wharves of the East River.

Besides these, in 1809, it broke out in Brooklyn, destroying between 30 and 40 lives; it was there confined entirely to a well-defined area of about 200 yards semi-diameter, the centre of which was a vessel from Havana, on board of which the first case occurred. It did not extend to the New York side of the river.

In our former report, allusion was made to the difference in locality of the disease before and after 1820. Prior to that period, every eruption of it was on the East River border, while in 1822 it suddenly shifted its point of attack, and for the first time the western margin of the city, on the Hudson River, received its approaches, and over the adjacent streets it swept with desolating marches. Nor were the topical characteristics of these localities less marked than their geographical positions.

While the former were, from all the accounts we have read, low and marshy, and pregnant with an abundance and great variety of filth, natural and acquired, the opposite side was equally opposite in character. If such a term can be applied to any class of inhabitants in this land, it was the aristocratic quarter; the residence of a population, aristocratic at least in cleanliness, and the cultivation of the elegancies of life, and did not present a square foot of soil from which such a fatal miasm could possibly have emanated; nor was it charged by the most strenuous of the domestic-origin theorists, that it could have originated from any other locality than the graveyard of Trinity Church, and even that idea was soon abandoned as untenable.

With respect, therefore, to the theory of the *exclusive* domestic origin of Yellow Fever in this city, we had then and there a case in which that idea was inadmissible, and the circumstances connected with the landing at this very point, of large cargoes of produce from vessels recently from ports where Yellow Fever prevailed, and which were themselves infected, are abundantly sufficient to establish its exotic origin and importation. With regard to its source, in the attacks experienced on the eastern side, all of which were prior to 1820,



we have, perhaps, sufficiently discussed that question in the conclusion of our former report, and it will suffice here to express the opinion, that the evidences of its domestic origin, though at first sight numerous and somewhat powerful, are either susceptible of other explanations, or are outweighed by strong negative, if not positive testimony of opposite character. This consists of the fact, that other quarters of New York were equally, if not more filthy than the slips and docks of the East River, and, therefore, more capable, under the theory of its domestic origin, of producing the disease; yet it was unknown in those localities; and further, that the places where it appeared were the wharves at which the shipping from infected ports hauled in and discharged their cargoes, and the vicinities of which were frequented by their crews. And furthermore, it must not be forgotten that its frequent repetitions prior to 1808, *ceased simultaneously with the adoption of new and vigorous Quarantine laws.*

1856. Commencement and progress of the Yellow Fever of 1856, at the Port of New York, (*as given in Dr. Harris' Report.*)

*April 10th.* The first case observed this year was admitted to Marine Hospital from a vessel from Havana.

*June 18th.* The "Julia M. Hallock" arrived with three sick, and three lost on the passage from St. Jago de Cuba.

*June 21st.* The "Jane H. Gliddon" arrived from Havana, with several sick, and two deaths on the passage. As part of her cargo she had several bales of uncleansed rags.

*July 2d.* The "Eliza Jane" and "Lillias," from Havana, with one sick each. E. J. lost three on the passage.

*July 6th.* "Lady Franklin," from Havana to Trieste, put in in distress, all hands sick; two died on the passage.

From June 18th to July 15th, a period of 27 days, 27 yellow fever infected vessels arrived at Quarantine.

*July 12th.* A marked case of yellow fever was received in the Marine Hospital, from 14 Oak Street, (the first one known in New York city,) with black vomit. The patient had arrived from Ireland, July 3d, in a vessel which had anchored at Quarantine, in the midst of the infected fleet. He remained in the ship over-night, and was subsequently landed at Castle Garden, and was taken sick a week afterwards.

*July 14th.* Two persons were taken sick in the Quarantine village, who had been unloading cargo from the "Gliddon" and "E. Jane."

*July 15th.* A lighterman engaged in conveying cargoes from Quarantine to Atlantic Dock, was taken to the Marine Hospital, with the fever.

The whole number of infected and suspected vessels arriving up to October 4th, was 79.

*July 29th.* It made its advent on *Governor's Island*, producing in four weeks 64 cases, but being confined wholly to the "South Battery," which is nearest and most exposed to the Atlantic Docks, and separated therefrom only by a narrow channel.

*July 22d.* It commenced in epidemic form at Marine Hospital, 25 of the officers and employees, and 8 other residents were affected, of whom 5 died.

*July 11th.* Two men employed by Mr. Bergen, on Hunt's Place, a little below Greenwood Cemetery, opposite Marine Hospital, went bathing Saturday evening, July 11th, and examined a quantity of straw left on the beach by the receding tide, and removed it to the farm yard. One of these men was attacked on Monday, and the other on Tuesday following, and both died with black vomit. After their death, two other laborers were hired, lodged in the same room; both successively sickened and died with black vomit.

*July 27th.* By this time 14 cases, 10 of which proved fatal, had occurred on the Long Island beach, opposite Marine Hospital.

*August 1st.* Fort Hamilton district was attacked. It attacked the shore line from Gravesend Bay and Gowannus, about 4 miles, at three nearly equi-distant points.

*September 10th.* It was received into a house at Partridge's Mill, near Coney Island; the persons affected were believed to have handled materials which had floated ashore.

Fifty cases in all were admitted to Marine Hospital from New York City, 8 of which were traceable to Brooklyn, and nearly all the others directly to infected vessels.

*July 23d.* A man from Bergen shore, New Jersey, was admitted to New York Hospital, a farm laborer, and had not been absent from the farm for a long period. He died next day.

*September 4th.* Four persons, citizens of New York, who had been 2 or 3 weeks at Craven Point, Bergen, N. J., were admitted to Marine Hospital. Two of the family had died previously. The dwelling they occupied was nearly surrounded by water at high tide, and much refuse material was frequently left on the beach. The owner of the dwelling suddenly sickened and died, and his widow had subsequently been ill, but recovered.

"The total number of well-authenticated cases of yellow fever occurring in the various localities in the vicinity of the port of New York, during the summer and autumn, (of 1856,) as ascertain-

ed by the most rigid investigation, was *five hundred and thirty-eight*. More than one-third of this number died of black vomit." (*Dr. Harris' Report*, p. 39.)

It is quite probable that the number of cases recorded as having occurred in New York and Brooklyn is incomplete, but we think it will be entirely safe to set down the whole number of cases which occurred within a circle of 5 miles radius, having its centre at the Marine Hospital, at much below 600.

From this brief summary of the circumstances of the attack of 1856, no one can reasonably hesitate as to the true source of the disease on that occasion. We have seen that the first case occurred as early as April 10; this, under the most liberal construction of the New Orleans theory, with the thermometer at only 50°, could not have been the produce of domestic causes; and besides that, we are told that the case was taken to Hospital, from a vessel from Havana. More than two months then elapsed before the occurrence of another case, which was from a like source, on 18th June, from which date, in 27 days there arrived 27 infected vessels.

With such abundant cause as this for all that followed, both on land and water, during the next three months, we could not be seriously asked to scrutinize the adjacent shores in the hope of a disclosure of some upturning of soil, upon which to cast the burden of causation. We have nevertheless made inquiries upon the subject, from intelligent residents of the section most seriously affected, and failed to find *any ground* whatever for such a conclusion.

But there is another circumstance of interesting character, which cannot be regarded as a mere coincidence in this history. In speaking of the meteorological phenomena of the season, Dr. Harris remarks upon the record kept at Fort Hamilton "between the 21st and 30th July, the wind was continually from the southwest during the afternoon of each day, while the temperature ranged unusually high, and was accompanied with a corresponding degree of humidity of the atmosphere," p. 59. (The wind prevailed also in the same direction *all day* in 6 of those 9 days.)

Now, by an inspection of the map accompanying Dr. Harris' Report, it will be seen that this S. W. wind was in a direct line from the fleet of infected ships near Gravesend Bay to Fort Hamilton, and it was at the end of that time, viz., on the "first of August, the pestilence set its fatal seal on the Fort Hamilton district. On that day, Gen. Stanton died, and as his mansion was situated on an elevation which looked out on Gravesend Bay, and was surrounded North and

West by a dense grove, it is fair to presume that the deadly infection was wafted to his delightful residence by the winds which swept over the infected shipping at Gravesend," p. 55. From that date to Aug. 8th, 12 cases occurred in the Fort, and thence it gradually spread, and uniting with the infected atmosphere at the other points of the same vicinity before alluded to, it soon covered with its fatal pall the whole sweep of that beautiful locality; yet, nevertheless, (a fact hard for domestic theorists to explain,) confining itself to a belt not over 300 yards wide, though stretching four miles along the shore.

There are few persons who, after this recital, we apprehend, will deny the importability of the Yellow Fever miasm, in the cargoes and holds of vessels from infected ports, and its communicability to others who may go on board of them after their arrival at this port. If any such there are, we would recite for their consideration the following case, kindly furnished us by Dr. Elisha Harris, from the Quarantine history of the present year, 1857, not as a new or rare case, but because of its perfectness and entire invincibility:

253 4TH AVENUE, July 13, 1857.

JNO. H. GRISCOM, M.D.,

*Dear Dr.*—The first vessel subject to Quarantine restrictions on account of Yellow Fever, this season, was the "Lucy Heywood," that arrived at this port from Gonaives, June 12th, having lost captain, mate, and two seamen, from Yellow Fever, on her passage, and on arriving at Quarantine, one sailor convalescent from the fever was transferred from the vessel to the Marine Hospital.

The vessel was laden with sugar and woods, and was ordered to anchor in the lower bay, off Seguin's Point. June 20th, (or 21st,) a robust man, aged about 30, a seaman, who had just arrived directly from Bangor, Maine, was employed by the consignees to proceed to the vessel, and take charge of her, as master and shipkeeper, while her cargo was being discharged on lighters. He remained constantly on board, and on the morning after the 7th or 8th night, viz., June 29th, he was seized with the premonitory symptoms of Yellow Fever, which disease soon became unequivocally marked, and he was sent up to the Marine Hospital, where he died of black vomit on the 14th day of his fever.

Hæmorrhages and profuse evacuations of blood, imperfectly transformed into black vomit, occurred on Wednesday, the 10th day of his fever.

It is worthy of remark, that in this instance *there could have been no other source* for the origin of the fever in that man, *who had just*

*arrived from Maine, than such infection as inhered in the cargo and cavities of the "Lucy Heywood."*

It is an incontrovertible instance of the imported origin of Yellow Fever in the Port of New York.

Another case of a doubtful character was received from the same vessel, July 4th, the final history of which is unknown to me. I saw the cases first mentioned, and know them to have been Yellow Fever.

Respectfully yours,

E. HARRIS.

The members of the New Orleans Commission, in their able report, admit "the susceptibility of the importation of Yellow Fever with the atmosphere which generated it;" at the same time claiming for almost every visitation of the disease in New Orleans, a local origin; by such modes as "upturning of the soil in digging the Carondelet and other canals;" "by extensive exposures of fresh earth in street paving;" "large fillings up and enclosures of the batture," or "immense exposures of a swampy soil in digging the Bank canal," or "digging extensive trenches and canals in draining," or "the immense excavation of two acres of ground, and with the removal of upwards of 336,000 cubic feet of earth for the foundation of the new Custom House in the heart of the city," during which latter occurrence a severe epidemic of cholera destroyed 3,843 lives, and 769 were lost by Yellow Fever.

Extensive upturning of new earth, levelling streets, digging cellars, spreading acres of sawdust over the streets and low places filled with it; exposures of the river bank from large cavings; excavations for cisterns and wells; marshes and pools near the town, and a great variety of other circumstances of a similar character, are mentioned as furnishing one blade of the "Shears of Fate," for a considerable number of other instances of Yellow Fever in other places in Louisiana and the neighboring States.

Now, as before remarked, with respect to this part of the New Orleans theory, we have nothing to say as to its applicability to that city, or any other Southern port; any criticism upon it by us must be confined to its relations to this city and vicinity, and within that range we unhesitatingly declare the opinion, that it has no shadow of ground upon which to stand, since the year 1820, nor do we believe it can be maintained for any of the attacks which this city has experienced within the present century. For if the theory of its domestic origin in this city possessed any validity whatever, surely, since the year 1807, a period of 50 years, there have been more than three occasions for its spontaneous production. There are compara-

tively young men living, who can remember the vast alterations which the face of this island has undergone within that time; what hills have been levelled; what valleys filled; what miles of streets have been paved, repaved, and paved again; how many thousands of cellars dug, wells sunk, cisterns, cesspools, and privies excavated, filled and emptied by the hundred annually, and numberless nuisances of every description created, abolished, and re-created. Within a few years, 90 miles of railroad track have been laid within the city limits, and since the introduction of the Croton water, in 1842, trenches have been dug for 255 miles of pipe; and finally, 130 miles of sewers have been put down, which receive, besides the ordinary overflow of the surface, the washings of nearly 40,000 water closets, and a vast amount of other refuse matter, all of which is discharged into the docks, and which, in turn, the "mud machine" is continually at work upon, raking it up from the bottom, and exposing to the air, regardless of winter's cold or summer's heat.

It is true that the soil of New Orleans is of a different character from that of New York; but we claim the palm for filthy streets, and for density of population, with all their concomitant evils.

We turn now to the consideration of that part of the theory which relates to the atmospheric influences which affect the development and extension of yellow fever, and we have to perform the more agreeable duty of giving an assent to that part of the doctrine of the New Orleans Commission, as far as our observation of the circumstances of last year's epidemic enables us to express an opinion.

It is claimed by Dr. Barton, (to whom, we believe, must be awarded the credit of the discovery,) that without a high general temperature, combined with a high point of evaporation, yellow fever cannot spread, cannot become epidemic. It was a matter of great interest to us, as well as to its distinguished discoverer, to ascertain whether this idea was in any degree verified last year in the precincts of the Quarantine and the opposite shore. In company with that gentleman, the Chairman of the Section visited some parts of the "infected district," particularly the region about Fort Hamilton, in the month of November last, with the double purpose of inspecting the locality, and ascertaining the condition of the atmosphere at the time of the fever visitation. The meteorological register kept at the Fort was opened before us, and on inspecting its columns, we found indubitable confirmation of these views.

In order to render this matter more fully understood, it must be remembered, that the meteorological observations referring to these

points are taken with a double thermometer, or rather two thermometers attached to one frame. One is a simple Fahrenheit, to ascertain the temperature; the other is a wet-bulb thermometer, to ascertain the temperature of evaporation. The bulb of the latter is covered with a layer of muslin, which is kept constantly moist by connection with a small reservoir of water, and the elevation of the mercury in the stem is influenced by the evaporation of the water on the bulb. If the water evaporates rapidly, the cooling thus induced causes the mercury to fall, and the number of degrees of difference between the two thermometers indicates the rapidity of evaporation. It is at once apparent, that if the atmosphere in which the instrument is placed is highly charged with moisture, the evaporating process must proceed slowly, and hence there will be little difference between the two thermometers; but if, on the other hand, the air contains but little moisture, its capacity for vapor being unsupplied, it will absorb the water more rapidly from the wet bulb, and the cooling thus induced depresses the mercury in the stem. The difference thus created between the two thermometers is the indication of the amount of moisture in the air, and is technically called "the degree of dryness" observed. In other words, the greater the difference, the drier the air.

Based upon these observations, calculations may be made of the number of grains of vapor contained in each cubic foot of air.

The atmosphere, like all other elastic fluids, has a capacity for vapor in proportion to its temperature; an amount that would saturate it at  $50^{\circ}$  would come far short of supplying it at  $80^{\circ}$ , and hence at low temperatures we find the mercury of the two thermometers in closer approximation; but in a heated atmosphere, the point of saturation being less easily attained, rapid evaporation is induced, and the two scales indicate a greater difference except under extraordinary circumstances. When, therefore, in hot weather we find the two columns of mercury approximating, or equalizing each other, we have an approach to, or the actual existence of, the point of saturation.

Let us now inspect the Meteorological Record of New Orleans during an epidemic of Yellow Fever. One of the severest attacks with which that city has been visited, occurred in 1853, when 7,849 died of that epidemic, besides 1,954 of various endemic disorders. On turning to the record we find

The average temperature of the air in July was ....  $79.88^{\circ}$

" " of evaporation " ....  $76.16^{\circ}$

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Degree of dryness.....  $3.72^{\circ}$



The average temperature of the air in Aug. was...81.25°  
 " " of evaporation " ...76.13°

Degree of dryness..... 5.12°

The condition of the atmosphere thus expressed is regarded by the Sanitarians of the "Commission" as an example of true Yellow Fever atmosphere; as presenting, in fact, in perfect unison, the elements of the upper blade of the "shears of fate."

Let us now inspect the records kept at Fort Hamilton during the epidemic of Yellow Fever at that place in 1856. We find the average

Temperature of the air in July was...77.28° in Aug...75.06°  
 " of evaporation " ...72.52° " 70.03°

Degree of dryness..... 4.76° 5.03°

Here, then, we find a very close correspondence in the condition of the atmosphere of the two localities, and so far as this instance goes, a verification of this part of the theory advanced in New Orleans.

But the question will probably occur to others that occurred to us on the discovery of these facts:

Why did this city, with its teeming populace, its unmeasured filth, and the actual introduction of at least fifty cases from without, and doubtless some fomites with them—why did this city escape a participation in the epidemic which trod so closely upon its southern border? Could there have existed a difference in the condition of the atmosphere of the two localities, sufficiently marked to account for our exemption, and if so, how shall it be ascertained? This exceedingly interesting inquiry, upon which, indeed, hung, in great measure, (at least in our opinion,) the fate of the theory which has been discussed, received upon investigation a solution as gratifying as it was unexpected.

For a long time, no reliable clue could be obtained to the secret. Upon reverting to our recollections of the season, it was well remembered that, to our personal feelings, the general temperature in both July and August, of last year, was unusually cool and comfortable for the season, and the air possessed a remarkable degree of balminess, and it was a matter of frequent remark, that the probabilities of a spread of the disease were, from these circumstances, very slight. But such evidence was too loose to base a conclusion upon, and it was not until some months afterwards that a record of the weather, kept on the eastern side of the city, fell under our observation, in which

we found indications of a decided difference in the atmosphere of the two localities. These records were made by Dr. J. P. Loines, of the Eastern Dispensary, and were furnished us by him.

We have obtained also, from the Report for 1856, of the Governors of the Almshouse, the Meteorological Record kept on Blackwell's Island, which so decidedly confirms the existence of a wide difference between the atmospheric conditions of the infected and the non-infected districts, that we think no apology is necessary for their full insertion in this place.

1856.	JUNE.				JULY.				AUGUST.				SEPTEMBER.			
	Mean Out-Door Temp. New York City.	Evaporation below.	Ditto at Blackwell's Island.	Ditto at Fort Hamilton.	Mean Out-Door Temp. New York City.	Evaporation below.	Ditto at Blackwell's Island.	Ditto at Fort Hamilton.	Mean Out-Door Temp. New York City.	Evaporation below.	Ditto at Blackwell's Island.	Ditto at Fort Hamilton.	Mean Out-Door Temp. New York City.	Evaporation below.	Ditto at Blackwell's Island.	Ditto at Fort Hamilton.
1	...	...	...	...	72	8	10	14	75	9	5	34	65	6	6	...
2	...	...	...	...	71	6½	8	5½	77	7	5	2½	66	10	9	...
3	...	...	...	...	72	4	5	3	76	5½	3	1½	69	8	6	...
4	...	...	...	...	72	3	3	3	75	4½	3½	2	71	8	8	...
5	...	...	...	...	72	8½	6	5	68	2	1½	1½	71	9	7	...
6	...	...	...	...	75	7	6	4½	70	7	7	3½	70	6	5½	...
7	...	...	...	...	75	5	4	2½	76	10	7	5½	71	7	6	...
8	...	...	...	...	69	4	4	2	75	7	5	2	70	2½	3	...
9	...	...	...	...	67	4	2	1½	74	8	7½	3½	73	8	8	...
10	...	...	...	...	70	6	4	3½	72	8	8½	3½	73	8½	8	...
11	...	...	...	...	75	5	3½	2	74	8	8	6	80	8	7	...
12	...	...	...	...	75	5	3½	3	72	9	8½	2½	72	9	8	...
13	...	...	...	...	76	5	4	2	71	8½	7	2½	73	10	7	...
14	...	...	...	...	84	6½	4	2½	71	7	7	1½	69	7	7	...
15	68	8	5	4½	83	8	7	4½	73	10	4	5	69	7	5	...
16	67	8	4½	2½	85	10	9	5½	72	9	8	3½	...	...	...	...
17	67	6	4	4½	84	9	9	5½	71	10	7	5½	...	...	...	...
18	64	1½	3	1	84	9	10	9	71	9	10	3½	...	...	...	...
19	70	5	3½	2½	75	10	9	3	67	3½	3	1½	...	...	...	...
20	74	9	9	5	74	10	3	7	70	5	5	1½	...	...	...	...
21	83	8½	9½	6½	71	9½	9	7½	67	8	6	3	...	...	...	...
22	84	9½	8	3½	77½	11	7	5½	69	10	10	4½	...	...	...	...
23	72	5½	5½	2½	80	12	8	6½	73	10	8	3½	...	...	...	...
24	66	4	5	8	82	11	11	9½	73	10	8	4	...	...	...	...
25	69	4	4	3	77	13	10	8½	66	9	8	3½	...	...	...	...
26	73	5	3½	2	80½	13½	10	4½	61	10	8	3½	...	...	...	...
27	76	7	9	3½	85	14	12	7	65	11	8	2	...	...	...	...
28	76	8½	8	2	87	14	12	7	68	7	6	2½	...	...	...	...
29	84	8	6	6½	78	9	7	3½	69	6	5	1½	...	...	...	...
30	81	9	7	8	82	10½	7	3½	68	9	7	3½	...	...	...	...
31	...	...	...	...	76½	9	8	2½	68	8½	7½	3	...	...	...	...

Mean average of evaporation below temperature of three months: New York City, 8½°; Blackwell's Island, 7°; Fort Hamilton, 4½°.

We submit, then, that in these facts and figures we find a confirmation of that part of the rule laid down by the New Orleans Commission, that a concurrence of high heat and abundant moisture is a "*sine qua non*" to the development and spread of Yellow Fever miasma; and with the admission that the germ which is planted may have been *transplanted* from another soil, and is not necessarily or exclusively indigenous, the *whole* doctrine of our Southern friends stands justified in our own experience.

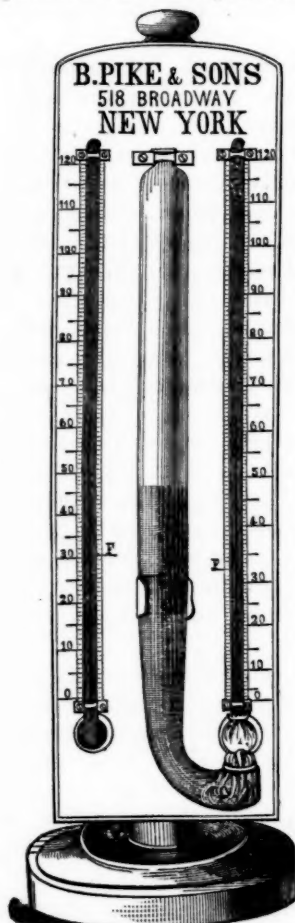


Figure of the Hygrometer referred to on page 112.

The next important inquiry is the practical one, how far this discovery may be applied to the prevention and extension of the disease in question, in this climate. Although this point has not been given to the Section to discuss, we may be indulged with a few suggestions on the subject. In the first place having demonstrated that Yellow Fever cannot be produced here from our own soil, we have only to be vigilant in preventing its importation, to avoid the approach of that blade of the "shears of fate," to escape it altogether. This is certainly not an impossibility, with stringent Quarantine laws, administered with integrity and intelligence. But should it again find a lodgment by accident or otherwise, should this blade of the "shears" be menacingly presented, then should all our energies be given to the application of every known means by which the second blade may be deprived of its temper; every means of drying and purifying the air should be resorted to.

The heat of the season, which is one of the necessary elements, we may not indeed be able to modify; but the moisture, at least of our

dwellings, and of the atmosphere immediately surrounding, we may in some measure control. Chemistry presents us with a variety of means for this purpose. Quick lime is a powerful absorbent of it; a low temperature will condense, a high temperature will dissipate, and a strong current will remove it. By these and other means of like character, we might, on certain occasions and circumstances, present a decided check to the progress of Yellow Fever, and probably had the public authorities possessed a knowledge of this law, the epidemic of 1822 might possibly have been somewhat controlled, both in extent and virulence.

But it is not alone in connection with the disease under discussion that this law assumes a great importance. It has long been known that dampness exerts a powerful influence over epidemic diseases. Cholera luxuriates in cellars, and other damp and noisome localities; dysentery becomes infectious in pent and humid atmospheres; and all other diseases, especially of the zymotic class, derive increased activity from dampness and confinement, and are greatly shorn of their virulence and fatality by the presence of sunlight, and arial currents.

Every one is aware of the disagreeableness and oppressiveness of a dwelling teeming with moisture—so much so, indeed, that a newly finished house and other similar damp places are instinctively avoided, if possible. Its effects are perceptible to those in good health; how much more injurious, then, must be its influence in disease of almost every kind, but particularly those which depend upon atmospheric influences for their propagation and extension. Like the fungi of vegetable and the amphibie of animal life, they find their pabulum in the dampness and gloom of the forest and cavern; under the drying power of the breeze, and the warmth of unobstructed sunshine, they shrink and vanish. It is in these enlarged views that the science of Hygiene, the *preventive* branch of medical art, takes a higher rank, and fills a wider field of usefulness and power.

We see in these facts and inferences potential reasons for the prohibition of cellar residences in cities—for the requirement of sunlight in sleeping rooms, school rooms, work shops, and in fact everywhere; for ventilation, or the transmission of currents of air *through* apartments; for the rapid removal of the moisture and other matters which continually distil from our own bodies; for the thorough paving of our streets, that no water may stagnate upon them; and for the incessant practice of the virtue of cleanliness, not only in our public thoroughfares, but also in our private quarters. In a word, the *philosophy* of the precepts of Hygiene becomes more apparent than ever.

How far the presence of moisture affects the progress or treatment of other diseases than zymotics, is also a question of great interest. An observation of the hygrometric state of an apartment may be made in a few minutes—between the commencement and termination of an ordinary visit—and it is to be hoped that the facilities afforded by the neatness and portability of the instrument will be extensively embraced.

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*Occlusion of Os Uteri. Vaginal Hysterotomy.* By B. FORDYCE BARKER, M.D., Prof. of Midwifery in the N. Y. Medical College, &c. Reported by J. R. Buist, M. D., House Physician to Bellevue Hospital.

Johanna Monahan, an unmarried domestic, æt. 26, and a native of Ireland, was admitted to Bellevue Hospital, as an obstetric patient, Sept. 21st, 1857. Is the subject of no hereditary cachexia, and with the exception of small pox, which she had when seven years of age, she has always been healthy. She has been subject to slight menstrual irregularity, and seven years ago she had a sudden suppression of this function, which only produced a temporary indisposition. She has never had any venereal disease, nor has she been troubled with leucorrhœal discharges. Says that she was seduced last autumn, and menstruated for the last time about Christmas, and thinks she must have become pregnant about that time. In April, being alarmed at the absence of the menses, she applied to a physician to bring them on. He made a digital examination per vagina, and told her that she was pregnant. His examination caused some pain, but he used no instruments, and gave no medicines. She positively denies that any attempt at abortion was made, but says that she tried to bring on her courses by foot baths, &c. She first perceived the motions of the child in July. For two weeks previous to admission she had a good deal of pain in the back and legs, frequent desire to void urine attended with pain. The bowels were costive. She entered the hospital supposing that she was in labor, but on examination there was no evidence of labor having commenced, and she was sent to the "waiting wards." The following Monday, Sept. 28th, she returned to the lying-in wards, stating that she had had pains part of Sunday, and all Sunday night. She was seen on the afternoon of the 28th. Her pains were quite strong, and recurred at intervals of 10 or 15 minutes. On examination the uterus was found rather high up, through the uterine walls the head could be felt presenting, but it had not en-

gaged in the superior strait. With a good deal of difficulty, what was supposed to be the os was found, feeling very much like the umbilical depression. The contractions of the uterus continued to grow more severe every hour until 6 P.M., when it was found that no progress was made in labor. The uterus was a little lower in the pelvic cavity, and what was supposed to be the anterior lip had become cedematous, and was about the size of a man's thumb. She was now put under the influence of chloroform, and a more thorough examination was made. The pelvis seemed normal, all the soft parts in a dilatable condition except the os, which was as above stated, and near the promontory of the sacrum. The warm douche was now employed, the woman being still under the influence of chloroform. This was only kept up about 15 minutes, when Dr. Barker arrived and made a careful examination. He considered it a case of imperforate os uteri, and determined to operate by incising the cervix. She was again brought under the influence of chloroform, and the operation was performed at 9.30 P.M. with a sharp-pointed bistoury and Simpson's uterotome. A puncture through the depression before described was first made by the bistoury of sufficient size to admit the closed uterotome. The liquor amnii now escaped most abundantly. Then with the uterotome lateral incisions were made, until the opening had a diameter of about two inches. The tissue was very much condensed, so that the incisions caused a creaking sound, audible to all the staff who were in the ward, resembling that produced by the cutting of sole leather. The uterine contractions continued to increase in frequency, the opening in the cervix gradually dilated, the vertex came down with the occiput to the left acetabulum, and she was delivered of a full-grown living female child at 6 A.M., Sept. 30. The placenta was expelled a few moments after, and the uterus contracted firmly. During the day a few doses of morphine were given, which gave her sleep. She was quite comfortable on the 1st of Oct., complaining only of a stitch in the left side. Oct. 2d, is doing well. Lochia natural, skin and pulse good. She only complains of some difficulty in voiding urine.

Oct. 23d. The patient has had a very favorable getting up, and was discharged to-day, quite well.

*Remarks by Dr. Barker.*

The propriety of incising the cervix in the rare cases of complete occlusion, and in some cases of extreme rigidity, is now no longer questioned by the best obstetrical authorities. The operation, if carefully

performed, is attended with very little risk, greater danger arising from delay in its performance than from the operation itself. This patient had been in labor more than 24 hours. The uterine contractions were very powerful, but nothing was effected by them except the exhaustion of the woman. The use of antimony and venesection have been proposed by some, even in those cases where the os is completely imperforate; but even if nauseants and the opening of a vein would contribute to make an opening into the cavity of the hermetically sealed womb, there is great danger that the opening might occur at the wrong place in the body, or at the fundus of the uterus, for example, and thus the fœtus escape into the cavity of the abdomen, instead of passing into and out of the pelvic cavity; and medical records furnish numerous proofs that the probabilities of such an accident are by no means hypothetical. So, also, in some cases of extreme rigidity of the cervix, where the os is not imperforate, the necessity for incision has been demonstrated by the highest obstetrical authorities, and is frequently verified by an enlarged clinical experience. In the *New York Journal of Medicine*, (New Series, vol. xiv., p. 231-252,) there is a very ingenious and interesting paper on this subject, by Dr. Willard, of Greene, now President of the New York State Medical Society. Our limits will not permit an extended examination of the pathological views of this article, or a *résumé* of the present state of science as regards this subject. But as truth in science and sound reasoning must ever be the basis of judicious practice, we may be pardoned for briefly calling attention to the results of modern researches, which have an important bearing on this subject.

1st. Within a comparatively recent date, it has been demonstrated that the neck and the body of the uterus are, both anatomically and physiologically, almost as distinct as two different organs. The circular muscular fibres of the neck are entirely distinct from those of the body. Indeed, there is no continuity of muscular tissue from the body to the neck, except that a few of the posterior longitudinal fibres of the body are prolonged to the neck, and constitute a portion of the middle posterior region of the neck. The neck possesses a greater amount of cellular tissue and a greater degree of vascularity. The mucous membrane of the neck also differs essentially in its arrangement, structure, and function, from that of the body. The mucus secreted in the cavity of the body is alkaline; that secreted by the cavity of the canal of the cervix is acid.

2d. These differences are still more striking during gestation. The physiological changes which take place are entirely distinct in their character. During gestation, the muscular fibres, the vascular appa-



ratus, and the mucous membrane of the body of the uterus are the seat of a wonderful development, totally different from the changes which take place in these structures in the neck. Its mucous membrane has nothing to do with the formation of the decidua, nor do its muscular fibres during any period of pregnancy form a part of the domicil of the fœtus, nor is there any considerable development of its vascular apparatus.

For ages the doctrine has been, and indeed most of the text-books now in use teach, that after the fifth month the cervix is drawn out and shortened by the expanding uterus; that at the sixth month it loses one-fourth of its length; at the seventh month it is only half its original length; at the eight it loses another quarter, and at the ninth the neck is obliterated. But no such changes take place in the cervix during gestation. It has its own peculiar physiological development. There is a softening of its tissue, commencing at the os tincæ, and after the fifth month this rapidly increases from below up to the os internum. The *cavity* of the neck dilates simultaneously with the softening of its walls, causing it to become spindle-shaped in the primiparæ, funnel shaped with the base downwards in those who have borne children. The os externum remains closed or very slightly open in the primiparæ up to the very end of pregnancy, while in the multiparæ it gradually opens from the os externum up to the os internum. During the last fortnight of gestation the os internum opens and the neck is lost.

3d. During parturition the physiological changes which take place in the neck are entirely distinct, both as to character, and when the process goes on normally, as to period of time, from those which take place in the body of the uterus. Those pertaining to the cervix constitute the first stage of labor, and those pertaining to the body the second. The phenomena attending these two periods of labor are entirely distinct in their character.

Now, as points of practical importance, it should be remembered, that it is absolutely essential, that the physiological changes of the first stage of labor should take place completely and efficiently, in order that those of the second stage may go on normally. The first stage may last many hours without seriously endangering life. But this is not the fact with regard to the second stage. It cannot be prolonged many hours with safety. It has been clearly demonstrated, by statistics founded on sufficiently numerous observations, that the danger to mother and child is in proportion to the length of the labor, that the mortality attendant upon parturition increases in a ratio progressive with

the increased duration of the second stage of labor. I think it will require no elaborate argument to prove that if the second stage of labor is prolonged to such an extent as to jeopardize life, from some pathological condition of the cervix uteri, which prevents the efficient completion of the first stage, it becomes the duty of the accoucheur to effect this by the resources of art, and in some rare cases incision is the only method compatible with safety.

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*Cancer of the Uterus, accompanied by Unusual Symptoms.* By AUGUSTUS K. GARDNER, M.D., Fellow of the New York Academy of Medicine.

In September, 1855, I was called to take charge of Mrs. O., æt. 48. She had been ill for some year or two, under the care of a homœopathic pretender. Indeed, since the birth of her seventh and youngest child, now six years old, she had not been well, although formerly enjoying most robust health. The first symptom that seriously inconvenienced her, was a difficulty in defecation, and for many years previous to my seeing her, she never had a movement of the bowels without a protrusion, accompanied with a discharge of blood from the bowel. Coincident with this was a gradually increasing, intense pain in the back, both of which were considered to be piles, and treated as such, but with little if any beneficial result. With the increasing pain commenced a profuse discharge of blood from the vagina. This was frequently in small quantities, caused by the efforts of defecation, but considerable hæmorrhages occasionally (one very profuse, three years previous) occurred, of sufficient quantity to produce temporary fainting and great subsequent prostration, a general anæmic appearance, and a very great loss of flesh and strength.

These symptoms were considered to be those of a "change of life," and were ineffectually treated. No examination had been made by the attending physician, and the character of her disease was not even suspected until she consulted my esteemed friend, Dr. Sims, who at once recognized the presence of a corroding and far advanced cancer of the uterus. This examination, although carefully made by Dr. S., at his residence, was followed by profuse hæmorrhage. This, with the fatigue consequent upon the ride, the first time that she had gone out for some months, caused great prostration, and when I saw her on the subsequent day she was very feeble—scarcely able to rise.

Examination showed extensive cancerous degeneration, involving not

only the uterus, the os and cervix of which had already been destroyed, but the circumjacent parietes of the vagina were involved, thickened with the cancerous deposit, and the surface of a considerable portion was ulcerated, and from it a profuse discharge was secreted. The least contact with the uterine walls excited profuse hæmorrhage. The surface I cauterized freely with nitras argenti, with the effect of entirely arresting the flow of blood. The patient was put upon the Tinct. Mur. Ferri, both for its hæmostatic effects, as well as its general tonic influence. A generous diet, with brandy, wine or porter, was ordered, and taken as freely as her depraved appetite would permit.

When the slough from the escharotic came off, bleeding again commenced, and it was repeated on the third day, and again once a week, for some half dozen or more times, when all hæmorrhage ceased from the vagina.

Some two or three weeks after this attendance, I examined the rectum for the cause of the hæmorrhage from the bowel, before alluded to, and which still continued, notwithstanding the uterine flow was diminished. This was found to proceed from a polypus, of the size of an English walnut, hanging from a pedicle inserted in the rectum, some two inches within the sphincter ani. This formed a valve, entirely closing the passage, and defecation was not possible, until by powerful efforts, accompanied by much pain and hæmorrhage, the polypus was forced externally, drawing down the gut with it. Drawing this polypus into view, I tied a silken ligature around it, which in the course of a few days effected a slough, and henceforth no difficulty in hæmorrhage or defecation was found to exist.

Some weeks after she had several severe and prostrating uterine hæmorrhages, which were checked by cold applications and Dr. Warren's hæmostatic, the recipe of which was published some time since in the *N. Y. Med. Times*, Feb. 1854, and which I found so useful, that I here recall it for the benefit of those who may be ignorant of it:

R.—Acid sulph. (by weight,) 3v.  
       Spts. terebinth,  
       Spts. Vin. rect.       aa. 3ij.     M.

Rub in mortar and cork tightly. Dose, gtts. xl. every hour in sugar water. The only objection to it is its tendency to nauseate.

After this period there was no further hæmorrhage, and little vaginal discharge. The principal complaint seemed to be dyspeptic, pain in the stomach, accompanied by eructations of wind. For this I prescribed bi-carb. sodæ and sub. nit. bismuthi, and with the effect of destroying a large number of lumbrici, which passed away to the number of

about two or three score, and with some relief of the unpleasant symptoms. (This effect of bismuth as a vermifuge is corroborated by an article in the *Gazette des Hopitaux*, March 12, 1857, there inserted from the *Boletin del Instituto-medico Valenciano*.)

Up to June, little change was perceptible. The patient gained strength and spirits, flattered by the hope of speedily getting well from what she supposed to be an "ulcer on the womb." The next phase was more disturbed rest at night, pain over the pubis, and this was suddenly followed by an entire cessation, accompanied by an involuntary discharge of urine, much terrifying her, but which was easily perceived to be from the ulceration having invaded the walls of the bladder. Except once for a few days, at a season supposed to be the monthly period, when it passed naturally through the proper channel, there was no cessation of this involuntary discharge.

Till this time she had taken three times a day the tinctura thuya occidentalis, as recommended by my friend, Dr. Leaving, as having a marked beneficial effect in cases of cancer. This was stopped, and various medicines were given partially for their effects upon the mind of the poor sufferer, and partially to soften the acidity of the urine, and thus to allay the pain from its scalding flow.

When the extreme mental disquiet at this new phase was somewhat alleviated, notwithstanding the great uneasiness at night, and consequent loss of rest, Mrs. O. gained in strength and spirits, so much so that on June 15th she was able (for the first time for months) to go down stairs on the occasion of her daughter's wedding.

This had short duration, for two days subsequently she was taken with chills, several occurring in the day, and repeated several times during the succeeding week, accompanied by intense fever with a burning skin, such as I have never before witnessed; a total loss of appetite, a lethargy approaching to stupor, and at times coma. This continued with little relief until on the evening of the 8th July, her spirit took its flight.

A post mortem examination was made by my friend, Dr. Conant, the day following, of which the following is the history as narrated at the next meeting of the N. Y. Pathological Society:

"The autopsy was made some fourteen hours after death. External appearances normal. Emaciation not great. Thickness of the abdominal parietes not far from one inch; muscles of good color, with some fat. The peritoneum was found completely covered by partially organized plasma. There was also about two quarts of fluid, of a purulent nature, in its cavity. The intestines were more or less bound to-

gether by bands of organized lymph. Internally, they presented no particular marks of disease. Liver normal, perhaps slightly fatty. Stomach, spleen, and pancreas all healthy. The left kidney was somewhat congested, while the right one contained a large abscess which occupied the entire lower half of the organ; the ureter upon this side was somewhat thickened, though the canal was free. The bladder, uterus, and rectum were removed in a mass, that they might the better exhibit their precise condition. The mucous membrane of the vagina was apparently studded with small calcarious deposits, so thick as to give it the appearance of coarse sandpaper. The entire posterior wall of the bladder was gone, as was also the corresponding portion of the vagina. There was no opening of a fistulous nature into the rectum. The womb was a mere shell, amounting to nothing more than the peritoneal lining, upon the whole of which were attached small bits of ragged uterine tissue, as though the whole organ had been eaten away by a corroding ulcerative process from below upwards. The same roughness continued upwards into this uterine shell, though not quite as well marked as in the vagina. There was no sign of an os uteri to be found. The thoracic organs were healthy, except some slight pleuritic adhesions, and very slight atheromatous deposit in the aorta."

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*Tincture of Benzoin as a Remedy for Epistaxis.* By B. FORDYCE BARKER, M.D., Professor of Midwifery, &c., N. Y. Medical College.

I was called on the night of January 3d, to see Anna —, aged 12, on account of a severe hæmorrhage from the nose. While in the carriage on my way to visit my patient, her father informed me that she was a delicate child, with disease of the heart following rheumatism, and that she had had several severe attacks of epistaxis before. The posterior nares had been twice plugged, each time by a distinguished surgeon of this city who had been called in consultation. He represented the present attack as more severe than any she had before. It had resisted all the remedies which they could apply, and from past experience with such attacks, he seemed quite familiar with all the ordinary methods of controlling such hæmorrhages. He had blown alum up the nostril, applied ice to the nape of the neck, plugged the nostril with lint soaked in a strong solution of tannic acid, but still the hæmorrhage continued at the rate of 60 drops a minute. I found my little patient, a feeble delicate child, extremely nervous, and exhibiting the symptoms of extreme loss of blood to a fearful degree. Her lips were colorless, her respiration hurried and panting, her pulse small and wiry, her surface cold, with great impatience and nervous excitability. I at once began to prepare to plug the posterior nares by means of the

sound of Belloc. But my patient suspecting what I was about, immediately began to protest with violent screams that she would have nothing of the kind done, that she would rather die than be so hurt any more, that the surgeons had before almost killed her, &c. In short, no reasoning or expostulation was able to allay the violent frenzy which followed. I have not found the plugging of the posterior nares a particularly easy or agreeable operation even with the best subjects, and in the present case I plainly saw that it would be unusually difficult. For some time past I have been accustomed to arrest the severe hæmorrhage resulting from malignant ulceration of the cervix uteri, by painting over the diseased surface the tinct. Benzoin Co. It now occurred to me that this article might possibly prove equally serviceable in the present case. Having obtained some from the druggist, I injected about a drachm, by means of a small syringe, up the left nostril, the passage from which all the hæmorrhage came. For a moment or two she complained bitterly of a severe burning pain in the nose, extending back to the ear, but it very soon subsided and the hæmorrhage entirely ceased within five minutes after the injection was used. I remained with my patient about a half hour, and then directed a teaspoonful of elix. paregoric to be taken, and this to be repeated in an hour if she did not fall asleep. She has had no hæmorrhage since, and her general health has improved in the most remarkable manner, under the steady use of the syrup of the phosphate of iron.

As a further illustration of the hæmostatic powers of this agent, I may mention the case of a gentleman, a prominent "bear" in Wall Street, who had for several years been suffering from internal piles, which had greatly impaired his general health from frequent bleedings.

One very hot morning in June, 1856, I was called to see him on account of severe hæmorrhage. I learned, that for several days he had lost a good deal of blood after his morning dejection, but this morning it was so excessive as to induce complete syncope. When I saw him he was still very faint, and there was a constant oozing of blood from the rectum, which was so sensitive that I could arrive at no satisfactory result from a physical exploration. With a small syringe I injected into the rectum a half ounce of tinct. Benzoin Co. as soon as it could be obtained. Its effects were quite striking. He was at once aroused from his syncope condition, and began to dance about the room in a most lively manner, blaspheming fearfully. Since that time he has suffered neither from the hæmorrhage nor the piles, and his general health has become excellent. I have repeatedly heard of his urging other sufferers to call upon me, assuring them that, "although



they would get hell-fire thrown up their guts, they would certainly get cured of their piles." It will probably not seem very extraordinary that his advice has in a great measure been neutralized by the argument he has urged.

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### REVIEWS AND BIBLIOGRAPHY.

*Influence of Recent Physiological and Chemical Discoveries on the Pathology and Therapeutics of the Digestive Organs.* By X. DELORE and A. BERNE. Prize essay of the Société Impériale de Médecine de Lyon. Victor Masson, Paris, 1857. pp. 183.

The progress of discovery, in the various subjects to which Chemistry has been applying the torch of investigation, has been so rapid within the last 10 or 15 years, that he is a public benefactor who collects the facts connected with any particular subject, and so arranges them as to exhibit their practical utility to its cultivators. We greet every one who labors in this department with a hearty welcome, and think him a public benefactor, standing only next to the discoverer himself. One has drawn the fact out of obscurity, the other has made it available for the use of his fellow men. From the host of laborers in the department of original research, much material has been gained, but it must be subjected to classification by minds fitted for large generalization, and accustomed to judging of the practical value of an idea. The little brochure of MM. Delore and Berne is very appropriate at the present time. What is the value of the discoveries, which Chemistry has been making, to the Pathology, and, still more, to the Therapeutics of the Digestive Organs? This question the authors consider in three chapters, entitled, the Hygiene of the Digestive Tube, Physiology and Pathology of the Digestive Apparatus, and Influences of Modern Discoveries on the Maladies of Nutrition, properly so called.

The first chapter is devoted to a consideration of food, both of vegetable and animal origin. There is nothing here which would especially interest our readers, as the facts and their full value have often been brought before them in the pages of this and other journals. The second is devoted to a subject of especial interest, and we shall endeavor to reproduce, in a connected form, what the authors have gathered from the wide expanse of scientific research.

Digestion has attracted attention since the days of Hippocrates, who



himself believed the process to be one of coction. Van Helmont taught the theory of *fermentation*, Glistonicus that of *putrefaction*, Pitcairn that of *trituration*, (valuing the mechanical force of the stomach at 12.951 pounds,) Albinus and Haller that of *maceration*, and Spallanzani that the saliva brought the food in intimate contact with oxygen, and afterwards the gastric juice, by its solvent power, thoroughly modified its nutritive molecules. Of all these theories, the nearest approximation to truth was the last, which claimed that the food was converted into chyme in the stomach, which, passing into the duodenum, gave up a liquid, known as chyle, to the chyliferous vessels, while the chyme remaining was acted on by the pancreatic liquid and the bile, which separated more chyle, to be absorbed in the jejunum and ileum. The intestinal secretions increased the quantity of the chyme, and frequently in the large intestines all the chyle being extracted, the chyme then became excrement.

Modern investigations have shown that the food first encounters the saliva, which inaugurates changes that must take place in the amylaceous material more fully when it enters the stomach. In the latter viscus the gastric juice dissolves protein bodies, and allows them to be absorbed as albuminose. In the smaller intestine the pancreatic juice makes an emulsion of the fatty matters, and accomplishes the final conversion into sugar of the amylaceous substances, and lastly the bile and intestinal liquids contribute their aid for the removal of all the nutritive material from the food.

The digestive process is not considered as confined to the stomach, since but a small portion of its complicated operations are effected there, nor even to the stomach and intestines, as after the various kinds of chyle (there are, in fact, three—saccharine, albuminous and fatty,) enter the blood, there still takes place what may be called digestion in the liver, lungs, kidneys, spleen, &c. As so many organs are actively engaged in fitting the blood for the uses of the system, it can be readily perceived that there are many modes by which digestion may be so deranged that it will be rendered insufficient to meet the demands of the system, and physiological considerations must be highly valuable in studying pathological indications.

In examining the details of the phenomena of digestion, the salivary glands must first be considered. The parotid glands are connected with mastication, and their volume is always proportionate to the exercise of this process. On this account they are largest in the mammalia, and absent in birds. Their secretion is large or small, dependent upon the movements of the lower maxilla, and the fluid secreted, containing

a considerable quantity of bi-carbonate of lime, which loses some carbonic acid on exposure, and is converted into carbonate of lime, becoming turbid. The secretion of the sub-maxillary gland is limpid as it flows from the duct of Wharton, but becomes filamentous on exposure. Its secretion has relation to the faculty of taste. Bernard has shown that acids are recognized through the lingual and bitter sensation through the glosso-pharyngeal nerve. These facts may be of practical avail in diagnosing the cause of certain nervous paralyses. The sublingual glands secrete a liquid which is associated with the act of deglutition. These three glands furnishing the material which is known as mixed saliva, initiate the changes which are afterwards completed by contact with the pancreatic and biliary liquid. Bernard had asserted that the gastric juice would arrest the catalytic action of salivary diastase. The experiments, however, of our authors show, that where vomiting had taken place after a meal *entirely* composed of rice, subsequent fermentation revealed a notable proportion of sugar.

The practical deductions from the properties of the saliva in certain cases of dyspepsia, are very important. Should the stools show that the amylaceous articles are not digested, which can be determined by the employment of iodine, it must be evident that some substance is required which will substitute the catalytic action of the saliva, or the pancreatic liquid. Germinating barley suggests itself as especially appropriate for this purpose. The profession should make careful experiments with it in all cases of dyspepsia of this character.

But there are various forms of dyspepsia, some arising from a fault of the stomach, others from the intestines, and others from the entire tube. It is well to study this affection under these heads:

1st. "Indigestion, or dyspepsia from a surfeit of food. There is a defect in the relation of the amount of food ingested and the secretion of the gastric juice." The indications here are "to quicken the normal secretions by excitants, such as coffee, aromatics, alcoholic stimulants, &c., and to promote them by warm frictions and all the methods which are in common use, but none the less physiological." When such efforts prove futile, then nature calls in to its relief the supplementary functions of vomiting.

2d. Acid dyspepsia, arising from vice of secretion. This form has been well studied by Joseph Franck. Those affected with it cannot take, without pain, "vinegar or acid wines; even milk sickens them and causes a sense of weight in the epigastrium; on the other hand, they are relieved by tainted meats, and cheese in which putrefaction has advanced; and alkalies or calcined magnesia seem especially suited

to them." Examination satisfies us that, instead of the normal gastric juice, we have a grayish mucus with uncertain reactionary properties, capable, however, of perfectly discoloring meats. The secretion is pathological. If food comes into the stomach under such circumstances, it does not find nature's solvent, but conditions suitable for the establishment of fermentation, viz., a temperature of 98° moisture, and a ferment arising from the albuminous material in the secretion. The liquid having slight acid properties, gives rise to an acid fermentation; "the alcohols are converted into acetic acid, amylaceous substances into lactic acid, fatty bodies, modified slightly by a reflux of the pancreatic juice, furnish butyric acid."

3d. Dyspepsia, from absence of secretion and gastric juice. The food will appear, in the stools, undigested. This state of affairs may be suspected when there is great fetor about the stools, disengagement of sulphydric acid gas, diarrhoea, &c., which show that the putrid fermentation has been established, and the preservative effects of the gastric juice are not active.

In the treatment of this form of dyspepsia, three methods have been proposed. *First*, the employment of excitants to the mucous coat of the stomach, such as sapid substances of agreeable taste, condiments, alcoholic liquors, bitters and aromatics, sometimes the prudent use of chicken broth, and of meat, which is the most natural excitant of the gastric juice. *Second*, rest to the diseased viscus. This is evidently diametrically opposed to the first method, yet it is probable that a judicious employment of both means is both prudent and beneficial.

*Absolute* repose cannot be obtained for the stomach, but we can obtain relative repose by the use of warm food, in small quantities, as much divided and uniform as possible, and the distension of the viscus will thus be avoided, while the thorough solution of the food will be facilitated.

The *third* method is that of M. Lucien Corvisart, and consists in the employment of an artificial gastric juice. Corvisart considers as an *aliment* "any crude substance *without* nutritive virtue," but which receives "a vital aptitude" in digestion, by virtue of which it becomes fitted for supporting life. A "*nutriment*" is an aliment that has acquired this vital aptitude, and can even nourish an animal that cannot digest. We have not space to discuss in detail the question of the employment of pepsine, or the preparation of the gastric juice known by that name, in this form of dyspepsia. Some success has followed its use, but this cannot do away with the necessity of re-establishing the secretion. To use the words of our authors, "the dyspeptic stomach is so bizarre

that it is quite possible that, mollified by doses of artificial gastric juice, it will begin to secrete normally; but to wish to annihilate the functions of this viscus, to wish to furnish it food ready prepared, this seems to us a singular pretension! Physiology and pathology have never given such instruction! It is the gastric juice of the individual himself which is indispensable to the accomplishment of good digestion, and if *its* secretion is exhausted or altered, we will give in vain food previously digested, or strange gastric juices!"

The wonderful researches of Bernard are set forth with much clearness, and due credit is given to the talent shown by Figuier in his memoirs on the subject of glucogenesis in the liver. The journals have been filled with abstracts of Bernard's discoveries, and every one is more or less acquainted with them. They have been fully sustained by Delore and Chauveau, in a memoir communicated (1856) to the Institute. Through these, we have learned that the liver has the power of transforming amylaceous material, which has been converted into sugar in the intestines and carried into it; of transforming this into fat, and of producing fibrine as the finale of the modifications of the albuminous principles of the vena portæ. Now, such operations cannot take place without the development of heat. The blood which leaves the liver is of a higher temperature than that which enters it, and is more elevated than the general temperature of the body. Here we have sources of animal heat altogether overlooked in the old theories of animal calorification. Bernard has further shown, that there must necessarily be present saccharine material to further the development of cellules in most of the tissues. *Where* the latter process is carried on most rapidly, *there* the quantity of sugar should be considerable, as for example at the departure of the blood from the liver, where the quantity of sugar is largest and the globules are most numerous.

If the functions of the liver are so numerous and important, we are now able to understand the wisdom of the Galenical doctrine, *Hepate vitiato, sanguificatio vitiatum*. Delore and Berne consider that the question as to the effect which is produced by the diminution or abolition of the glucogenic function, is yet sub-judice. Bernard had claimed a species of hyper-glucogenesis, on the part of the liver, as the cause of Diabetes, and Jangot thought the latter proceeded from abolition of the hepatic function which has formed into fat the saccharine material from the intestines.

Hæmorrhages are not infrequent in persons attacked with hepatic affections; may not these arise from the cessation of the transformation of the albuminose of the vena portæ into perfect fibrin?

Since all the food must pass through the liver, in order to make it suited for nutrition, it must be seen that no nutriment will be serviceable which does not pass through this barrier. "If some sugar is injected under the skin of an animal, the liquid will be absorbed, but it will not be modified or digested in the liver, and at the end of a few minutes analysis will detect it in the urine."

\*Another matter of practical importance is deducible from the late studies of Bernard; if the skin shows so clearly an action under bilious impregnation, in the form of pruritus hepaticus, may we not say there is also a pruritus cerebialis? and in this way the sleeplessness and other symptoms associated with remittent febrile attacks may be explained.

Modern views on the physiology of the spleen and pancreas are very fairly exhibited with all the sprightliness and vivacity that Frenchmen show in their scientific papers. The physiology of the intestinal tube is very closely examined, and an accurate account given of the general nature of its excrements and intestinal gases. Some *novel* suggestions on the mode of analyzing these substances strike us as being decidedly *Gallican*. It is suggested, for the purpose of examining the experiments, that le malade irait à la selle dans un entonnoir placé sur une carafe remplir d'une assez grande quantité d'eau. The fecal matters thus received are shaken with the water, and after a little time they will be deposited in the order of their specific gravity, the undigested food at the bottom, and mucous material on the surface. By such an arrangement, the substances which are generally refractory to digestion, as well as those which are not digested owing to some peculiar cause in the case under investigation, can be readily perceived. "Among the first are found whole grains which have been protected by their epidermis; particles of animal tissue which resist digestive action, ligaments, tendons, &c.; fragments of bone, the coloring material of vegetables, (chlorophyl?) and fatty substances." In the case of imperfect digestion, fragments of beans and pieces of meat may be found undigested. "The fecal matters should be examined to see whether the patient is afflicted with biliary calculi; cholesterine in powder may be collected at the bottom of the carafe, and on decanting it should be preserved for analysis." With this mode of examination, many important hints may be obtained as to the nature of certain doubtful cases of sickness.

As for the analysis of the intestinal gases, we are not certain whether the authors are desirous of being funny or serious, when they propose as an excellent mode of determining the *nature* of these gases, that the patient should be *plunged in a bath*, where it could be an easy

matter to *collect* them and retain for after analysis. They quote one of Van Helmont's tests, which would be a pretty good method of determining between a combustible gas and one fatal to combustion. We give it as a specimen of ancient physiological chemistry.

"Ructus sive flatus originalis in stomacho, prout et flatus ilei extinguunt flammam candelæ; flatus autem stercoreus qui in ultimis formatur intestinis, atque per anum erumpit transmissus per flammam candelæ transvolando accenditur ac flammam diversis coloris, iridis instar expromit."

The collection of intestinal gases for examination by the modern or Van Helmontian method would be a singular occupation for a physicist! But we forbear any further notice of these refinements of analysis!

It is only necessary to add in this portion of the subject, that we have been taught by chemistry the value of magnesia and carbon as absorbents in cases when carbonic acid is generated in quantities, and of sub-nitrate of bismuth where sulph-hydric gas is present.

The authors have condensed much information—the result of late investigations on the action of certain medicines, with a brief notice of which we shall close our article. Much is due to Mialhe, who, in 1848, directed attention to the important fact, that medicines do not act by virtue of the quantity injected, but of that which is dissolved. "Every insoluble body is inert." Thus charcoal can only be given with reference to its action in the stomach and intestines, as it cannot enter into the circulation. In general terms, a medicine insoluble in water will not dissolve in the organism, unless some of the fluids in consequence of their saline or acid constituents should act as solvents. If it does not find these conditions favorable to solution, it accumulates in the intestines, and after a certain accumulation the conditions may occur, and the solution be rapidly produced, when serious accidents would result. Thus, when oxide of antimony is employed, and accumulates in the system, if the patient should take tartaric acid, the result would be the formation of poisonous quantities of soluble tartrate. A similar result has to be guarded against in the use of iodine with calomel.

Mialhe suggests that the amount of chloride of sodium eaten by sailors in salt provisions, makes them peculiar sensitive to the mercurial action of calomel, in consequence of its conversion in large quantities into corrosive sublimate.

The advantages of modern discoveries with reference to the digestive organs, consist: First, in our knowing better the functions of different portions of the digestive apparatus, and hence being able to find the diseased portion. Thus, if meat is not digested, the stomach is at fault;



if fatty matters, then the *pancreas* must be suspected, &c. Secondly, the various forms of dyspepsia have been more scientifically classified. Thirdly, the constitution of the *fœces* being better understood, very important indications of the pathological condition may be gained from their examination.

L. H. S.

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### PROCEEDINGS OF SOCIETIES.

#### *New York Academy of Medicine.*

[At the regular meeting of the Academy, Dec. 2, the Discussion on Puerperal Fever was resumed. We are indebted to Dr. Stephen Smith for proofs of the remarks of Dr. C.]

DR. A. CLARK said: That as much time had elapsed since he was first honored with the attention of the Academy on this subject, he would take the liberty of recapitulating the positions he had taken in regard to the nature of puerperal fever. He had expressed his concurrence in the views of those who believe the disease to be contagious, and had spent a little time in considering the different doctrines relating to the means by which the contagion is conveyed from one person to another. He had stated that in his belief the disease is composed of two elements, a fever and an inflammation. In this respect, it resembles the epidemic dysentery, the epidemic erysipelas, or small pox. He had already stated that in the epidemic erysipelas which prevailed in New England, and in the western States, from seventeen to ten years ago, these two elements were as clearly distinct, in the time of their development, as they are in small pox. A febrile movement, lasting a variable time, attended by swelling of the tonsils, and of the superficial and deep-seated glands of the neck, preceded the grave inflammatory lesion; and when this latter made its appearance, one, two, or three days after the fever commenced, it was an erysipelas of the head and face, of the lower extremities, the body, side, or arm; or it was a pleurisy without any external inflammation, or a peritonitis, or, indeed, almost any internal inflammation. In lying-in women, and those in the puerperal state, it assumed the form of puerperal fever. In these various modes of development, it seemed as if the same poison was demonstrating its morbid power by lighting up a fever first, and kindling an inflammation afterwards, the double effect of one agent. He had expressed his belief that the fever of the puerperal disease was just as certainly followed by in-



flammation, as the fever of small pox is followed by an eruption, complete or incomplete; and as the fever of small pox never endangers life till the eruption, or some modification of it occurs, so he believed the puerperal disease is never fatal, but by the aid of its inflammatory element. These comparisons, however, illustrate nothing more than the compound nature of this fever; the succession in the two leading elements follows a very different law; for while small pox fever requires two days to reach its eruptive stage, and epidemic erysipelas one to three days to reach its inflammation, the puerperal fever, like epidemic dysentery, is followed promptly by its local lesion, commonly in a few hours, often in one. He believed in the communicable character of the disease, and this, independent of other reasons, would almost compel him to believe in its febrile nature. He believed in the inflammatory lesions, because their constancy is testified to by every accredited observer, except in a few rare instances.

These rare instances were the cases which, in the belief of Simpson, Gooch, and others, were without lesion of any kind—a simple fever, the poison of which overwhelmed the vital powers. It was his object, on a former occasion, to show that these cases were no exceptions to the general rule, but that they were really marked by inflammation, like the others; but that the inflammation was one that had escaped detection, that it was an endometritis, and that the inflammation affecting the inner surface of the uterus involved the open or valvular mouths of uterine veins, and might produce purulent contamination of the system while no pus was found in the veins themselves after death. The evidence of this was in the inflammatory exudation on the inside surface of the uterus; the redness of the uterine structure, penetrating a minute distance from within outward; the symptoms of pyæmia, and the discovery of pus in distant organs. To present this idea was the chief object of his former remarks; and to give it distinctness, he had referred to and recognized the then commonly described inflammatory lesions, viz., the peritonitis, the purulent phlebitis in the uterine sinuses, and the purulent inflammation of the uterine lymphatics. These, together with endometritis, he had stated were the primary *inflammatory* lesions, and that there were other organs subject to inflammations, in a subordinate and secondary degree.\*

These were some of the views that he had presented at a former

\* In making this classification of the inflammations, Dr. Clark did not mean to say that they were the earliest evidence of the morbid impression made upon the system; he meant to say simply, that among the inflammatory changes, those in the peritoneum and uterus were first in time and importance.

meeting, and he recapitulated them now to correct any erroneous impressions which might be formed from the condensed report of his remarks published in the medical Journals.

He could hardly open this subject for the further exposition of his views, without first noticing some of the statements made by Dr. Barker when the topic was last entertained by the Academy.

Dr. Barker urged that puerperal fever is a zymotic disease. So perhaps it may be, but Dr. Clark did not like the term, and was not in the habit of using it, because it is vague and of uncertain import. As commonly applied, it means, he said, all endemic, epidemic, and contagious diseases; and in this latitude of usage it had been made to embrace the most dissimilar affections. He had looked into the annual report of mortality in this city for the year 1842, prepared by our learned and industrious fellow-laborer, Dr. Griscom, much the best report that has ever issued from our City Inspector's office, and he finds there that the diseases usually called zymotic, are the miasmatic, typhus, and typhoid fevers; erysipelas, small pox, scarlet fever, and measles, thrush, cholera infantum, croup, dysentery, diarrhœa, hooping cough, influenza, and syphilis. He finds that our Boston friends, in preparing the valuable mortuary reports of Massachusetts, use the term, and spread it over precisely the same ground; while puerperal fever is carried far off into another section, and appears among the diseases of the organs of generation. This he discovers is the general usage of those who are attached to the word. By this very breadth of meaning, the term becomes vague and uncertain, and therefore objectionable. Should there be a disposition to use it in a stricter and narrower sense, as applicable to those diseases which reproduce the poison which causes them—in other words, strictly contagious diseases—in respect to the old idea that these diseases implied a fermentive process within the system, there would probably be less objection to the term, though even then it should be admitted into the medical language as a figure of speech, and in deference to the fathers. If the term as used by the gentleman means simply a contagious disease, Dr. Clark was ready to subscribe to his opinion, but for the sake of precision he was compelled to prefer the words *contagious* and *communicable*, to *zymotic*.

Dr. Barker had taken the occasion, he said, to speak somewhat disparagingly of the study of pathological anatomy, as if it limited our view of disease, and taught us to disregard its general history. To this Dr. Clark would reply, by pointing to what pathological anatomy had done, and the rank which pathological anatomists hold in our pro-

fession. Nobody could doubt that the immense improvements in medical diagnosis and practice, which distinguished the present century from all that had gone before it, the discovery of new diseases, and the advantageous changes in the treatment of affections long known, were to be set down to the account of this branch of study, more than to that of all others put together. New York physicians had gained the reputation of excelling their brethren in most other cities in the art of diagnosis. If they deserved this reputation, it could be attributed to nothing so much as to the general cultivation of pathological anatomy, and to the reflection which that study suggests. The Pathological Society, with its profusion of means, and by its calm deliberations, and its constant reasonings from morbid appearances in the dead to symptoms in the living; was a constantly recurring lesson to teach the profession not only what this study is worth, but to inform them what phenomena in life are not illustrated by the revelations of the scalpel, and also to keep alive a love for this pursuit by a demonstration of its advantages. In this respect it is far the most useful of our public societies, and who will venture to say that it has narrowed our view of diseased action, or turned us away from the proper consideration of the morbid agencies which work unseen, but fatally, leaving few intelligible footprints?

Morbid anatomy contemplates what it cannot demonstrate to the eye, no less than the obvious changes of structure.

If we look through the catalogue of distinguished names that grace our profession in the present age, we shall find that with scarcely a single exception they are the names of pathological anatomists, and that the foundation of their distinction is laid on this study. Brodie, and Velpeau, and Nelaton, Andral, Chomel, Louis and Trousseau, had been nothing if their intelligence and zeal had not induced them to follow their fatal cases to the dead-house; and certainly it will not be said that these men have contracted their perceptions, and have been led to disregard any recognizable morbid agency by these pursuits. On the contrary, any just study of men must compel us to the conclusion that the same zeal which urges to the laborious use of the scalpel, is the parent equally of that industry which gives the largest and widest views of disease in all its relations.

But we are told that an appeal to the *post mortem* appearances can hardly be allowed, because the observer is likely to come with his mind preoccupied with the idea that he must find some change of structure to show for every disease. This at least seems a fair construction of the objection taken, that "pathological anatomy has led to exclusive

solidism in medical doctrines." Is this really so? The present century illustrates the influence of pathological anatomy on professional opinions. Post mortem examinations were rarely obtained, or even asked for, till the time of the French revolution. Fifty years ago the doctrines of Cullen, or rather a solidism more exclusive than his, possessed the whole medical mind. Humoralism could hardly be said to have had an advocate. Even as late as 1830, Cullen reigned. In 1835 he (Dr. Clark) was born into the profession, a solidist. Almost all the senior and middle aged men, who now complimented him with their attention, were baptized into the same faith. And where are the exclusive solidists to-day? The very phrase is obsolete, or if not, is known only to mark a period in the history of medicine. Every man's opinion has undergone a change; and pathological anatomy has effected this change. Aided by chemistry and the microscope, it has shown us, both by its positive and its negative results, that there are diseased actions which leave no marks in the solids, or only such as are secondary and subordinate. When every physician, at all familiar with post mortem examinations, has found many of the solidist opinions in which he was educated gradually melting away; when such men as Carswell, Andral, and Cruveilhier\* take the lead in investigations which show the blood to be the seat of the gravest changes, and, so far as we can see, primary changes, there is little ground for suspecting pathological anatomy of exclusive solidism.

But these are, after all, little more than side issues. The statement of gravest significance, and if it be supported, one which closes the argument on the real question at issue, is that the "lesions are often not sufficient to influence the progress of the disease, or to explain the cause of death." This statement, unsupported as it is by facts, is nothing more or less than begging the question. The opinion which follows in support of this assertion, that "the most malignant form of this disease, that which proves fatal in a few hours, offers the *fewest and least striking* structural lesions," may be true enough; for intense pyæmia requires little aid to destroy life, and certainly it is not the most striking among the manifestations of morbid anatomy. Two questions are suggested by these statements: 1st—What is really the shortest time in which the most malignant form of puerperal fever destroys life? and, 2d—Whether this shortest time is not long enough

\* Cruveilhier, (*Anat. Path.* Liv. xi. p. 3,) discussing this very point, viz., how purulent contamination affects the system, says, "The solidism of the school of Pinel was mute before such facts;" and adds, that the "*sympathy*" of Bichat was "a metaphor, a felicitous word, which took the place of a fact."

for endometritis to produce fatal contamination of the blood? or, in other words, in what time can purulent infection overwhelm the vital forces?

Dr. Clark had not, as he said, made any extended research to ascertain the shortest duration of puerperal fever. He had only looked over his own cases, and those reported by the late Dr. Vaché. These latter are cases which occurred in Bellevue Hospital in 1840, when the form of the disease was the most malignant, and the fatality among those attacked greater, than in any other visitation of the fever, since the lying-in wards were opened. The shortest case of which he had any notes was fatal in 30 hours. The six shortest of Dr. Vaché's cases lived 33, 36, 42, 44, and 48 hours respectively, and the lesions noted in these several cases were as follows:

*Case 5.*—Duration, 33 hours. All the peritoneum injected, that of the small intestines highly so; mucous lining of the small intestines much softened and inflamed, a portion of that of the stomach inflamed; a pint of straw-colored serum in peritoneal cavity; interior of uterus appeared natural.

*Case 8.*—Duration, 36 hours. Peritoneum decidedly injected, containing a pint of dirty cream-colored puriform fluid, with shreds of lymph; mucous membrane of stomach and intestines considerably inflamed; *the inner surface of uterus covered with a shreddy secretion of the color of gangrenous tissue, and apparently saturated with pus.*

*Case 19.*—Duration, 42 hours. Peritoneum somewhat injected, containing a quantity of reddish brown fluid, but no lymph; half an ounce of pus between the uterus and bladder; uterus lined with a *dark chocolate-colored stringy secretion*, which being scraped off, left *the inner surface somewhat injected.*

*Case 12.*—Duration, 44 hours. Some lymph on the peritoneum, half a pint of brown serum containing lymph flocculi, in its cavity; inner surface of uterus covered by a *fatid stringy matter, intermingled here and there with a gray, ash-colored deposit.*

*Case 1.*—Duration, 44 hours. Peritoneum injected, a pint of sero-purulent fluid in its cavity, considerable lymph on its surface; inner surface of uterus covered by *light red secretion, with an occasional black patch.*

*Case 13.*—Duration, 48 hours. Lymph on several portions of the peritoneum; a little pure serum in its cavity; right ovary large and contained some small abscesses; inner surface of uterus lined with a *pink-colored matter* of the appearance of healthy lochial discharge;

broad ligaments of right side thickened and puffed out by deposition of lymph.

It is proper to state here that Dr. Clark saw all the cases reported by Dr. Vaché as they occurred after the 23d of February, up to the time the lying-in women were sent to the island; and at Dr. Vaché's request he took charge of such patients as were left in the infected wards, when new wards were opened. He also witnessed and recorded all the post-mortem examinations which were made at Bellevue after the above date. Case 4, and all from 6 to 18, he saw, and it was from his notes of the lesions that Dr. Vaché's reports were partly made up. When case 5 in the above list was examined, particular attention had not been paid to the inner surface of the uterus, and the report that this surface "appeared natural" cannot be taken as conclusive, especially since Dr. Vaché himself, as a rule, did not witness the dissection, for prudential reasons. It was case 8, in which the uterus presented an appearance altogether like that figured by Cruveilhier, Liv. iv. pl. vi. fig. 2, that drew attention strongly to this surface, and it was carefully studied in all the cases which occurred afterwards.

Dr. Clark holds that the "light-red secretion" of case 1, the "green shreddy gangrenous looking effusion" of case 8, the "foetid stringy matter" of case 12, the "chocolate-colored stringy secretion" of case 19, and the "pink-colored matter" of case 13, all indicate a morbid state of the inner surface of the uterus, and that all these "matters" and "secretions" are the fibrinous or purulent products of inflammation, colored variously by the blood in the uterus. The natural appearance of this uterine surface for some days after delivery, is in his conviction that which is given it by adherent blood, coagulated in shreds or small masses, and by the watery secretion which is effused to wash away this blood; the prevailing color being that of dark, coagulated blood, for at least two or three days.\* As to Dr. Vaché's

\* M. Cruveilhier (*Anat. Path.* Liv. xiii, p. 2) expresses the opinion that purulent effusion is in general a part of the process by which the inner surface of the uterus becomes covered again with its lining membrane. He regards the lochia as a form of pus in most cases, and thinks that non-purulent lochia are the exception. He does not, however, regard the earlier lochia as having this character. It is possible that the analogy of a healing ulcer may have led him astray. With our improved means of determining this point, the lochia should be investigated anew. It has been stated in an earlier part of this discussion, that in the few cases examined of persons dying of puerperal convulsions, and other non-febrile accidents of labor, pus was not found in the uterus, and that in a portion of the cases of actual endometritis the product of the inflammatory ac-



suggestion, that the "pink-colored matter," in case 13, was probably healthy lochial discharge, had he seen it himself he would hardly have entertained this idea. Dr. Clark's notes on this case are full, and having been made at the time of the autopsy he thinks they can be relied on. "The inner surface of the uterus was covered by a thin flocculent matter which could be easily removed. This appeared to be lymph colored by a little blood. There were a few shreds of lymph lying unattached in the neck. The odor was not very offensive." "Several vessels of the left ovary contained each, instead of blood, a drop of what appeared to be pus." Purulent contamination in this case, then, may have had a double origin. Dr. Clark adds to these, one

*Case.*—Duration, 30 hours. Peritoneum injected, most so over the uterus and intestines; about a pint of dirty orange-yellow, sero-purulent matter, containing a few flocculi of lymph in the cavity; inner surface of uterus covered by a dirty pink-colored and yellowish white exudation which appeared to be fibrine.

In all these *short* cases there was evidence of inflammatory lesion of the peritoneum; in all but one there was a morbid exudation on the inner surface of the uterus, and in this one Dr. Clark was informed by those who made the dissection that the inner surface of the organ was not particularly inspected.\* There may be cases on record of

tion on the free surface is not pus, but lymph. It is possible, then, to say the least, that this distinguished observer may have erred. But if a more careful investigation should confirm his views, it would only touch one of the supposed evidences of endometritis, and not the fact of its existence or its relations to the symptoms of puerperal fever. The reparative process, though pyogenic, has no analogies in its *constitutional effects* with the inflammatory; and it appears from Sedillot's experiments that a certain moderate quantity of well-conditioned pus may really enter the circulation, and yet produce no sensible effects.

\* Cruveilhier (*Anat. Path.*, Liv. viii., pl. i. ii. iii., p. 11,) reports a case of puerperal fever (typhus puerperal) which was fatal in fifteen hours after delivery. The peritoneum contained a large quantity of white pus, such as is discharged from a phegmonous abscess. The lymphatics of the uterus contained pus. There was a dark slate-colored softening of the left lung. In this case M. Cruveilhier thinks the peritonitis preceded the delivery, as the woman had had abdominal pains and fever for five days.

On p. 10 he records a case fatal in *twenty-four hours*, the time of the attack being well marked and after delivery. The peritoneal cavity contained serum slightly bloody, and between the uterus and rectum pus. The sub-peritoneal cellular tissue was infiltrated with pus on the colon, along the right ovarian vein, in the broad ligaments (sero-purulent matter), on the neck of the uterus, and part of the bladder, etc. Uterine lymphatics full of pus; left ovary enlarged and softened.



shorter duration than these. But it is of little importance whether there are, or are not; for it was claimed, when these views were first presented, that this internal inflammation, except in the most striking cases, had been overlooked. The appeal to the past, then, cannot be admitted into the argument. Future observations, made in view of the appearances here described, must decide the question, whether there is or is not a puerperal fever without some inflammatory lesion, peritoneal, uterine, or intra-uterine.

Still it will not be a loss of time, perhaps, to inquire a little farther into the probable effects of pus, laudable and ill-conditioned, mingled with the circulating blood. Sedillot, in his valuable treatise on "Purulent Infection or Pyæmia," has fixed the period in which this contamination from ordinary causes will prove fatal, at four to eight days; admitting, at the same time, the *pyoëmiées foudroyantes*, in which a large quantity of pus penetrates the circulation rapidly, as from an abscess opening into vena cava or portal vein, in which death will be determined in a few hours (p. 482.) He recognizes, also, a grave condition, indeed incurable poisoning, when pus is mingled with the blood, though the quantity be less considerable, by continual additions (p. 483); and he expressly denies that in the rapidly fatal cases there is any formation of metastatic abscesses. In nearly all the cases he reports of this accident in man, these abscesses were found after death; but when pus was injected into the veins of dogs, *if the quantity was large*, or if he injected the *serum of ill-conditioned pus*, death occurred without such productions. His experiments also show that in the dog, at least, moderate purulent infection may produce no disastrous effects; and that in larger quantity, pus in the circulation does not always produce fatal poisoning.

These experiments are sufficiently instructive, in their bearings on several aspects of this question, to authorize a particular reference to some of them. Thus, in

*Expts. 1 and 2*, M. Sedillot injected laudable pus, about 60 grains, the dogs weighing 14 and 16 lbs. troy, and it produced no sensible effect.

In another case (p. 10) the disease was fatal in *forty-eight hours*; there was flocculent serosity in the peritoneal cavity; pus was infiltrated into the sub-peritoneal cellular tissue of the left iliac fossa; along the left ovarian vein to the kidney; around the neck of the uterus; in the walls of the vagina; and filled the lymphatics of the sides of the uterus.

In this series of cases the shortest was fatal in 24 hours. Pus was found in the uterine lymphatics in all, and in all there was peritonitis. The inner surface of the uterus does not appear to have attracted attention.

*Expts. 3 and 4.*—The same quantity, the dogs of the same size—for a short time yawning; pendiculations, chills, refusal of food; and in one (a little of the pus being from a bubo) alvine evacuations; but in both prompt recovery.

*Expts. 5 and 6.*—Dog weighing 15 lbs., 225 grains of laudable pus; dog 22 lbs., 320 grains. Hurried respiration, thirst, refusal of food, disposed to be alone, lying down and unwilling or unable to rise, after some days extreme emaciation: recovery.

*Expt. 7.*—Dog 17 lbs., 120 grains of foetid pus. Animal gravely ill; very feeble; intense chills, panting and difficult respiration. After ten days began to recover.

*Expt. 15.*—10½ lbs., 120 grains of pus, greenish and foetid, from a phlegmon in the foot; in ten minutes animal supported himself against the wall, then sank down upon the earth, chills, hurried respiration; cries; *death in one hour.*

*Expt. 16.*—Dog 17 lbs., 60 grains of pus, from a venereal abscess of the scrotum; feebleness, difficult respiration, chills, horripulations, alvine evacuations, semi-paralysis of the posterior extremities; *death in one hour.*

*Expt. 18.*—Dog of medium size, 375 grains of well-conditioned pus; extremely feeble; stupid; when urged to walk, staggering, and falling frequently; frequent respiration; violent chills; alvine evacuations; tongue pendent; eye brilliant; later, respiration slow; then difficult, then raleuse; *death in four hours.*

*Expt. 20.*—Dog 27 lbs., 105 grains of pus from a gangrenous abscess in the muscles of the neck. Animal soon sunk to the ground; alvine evacuation; respiration accelerated, panting; attempts to vomit; neither ate or drank; *death in five hours.*

*Expt. 21.*—An Alsacian dog, 90 grains of the same pus; anhelation; diarrhoea; refusal to eat or drink; *death in eight hours.*

*Expt. 27.*—Dog 14 lbs., 60 grains of pus from an abscess in the thigh three weeks open; violent chill; feebleness of posterior extremities; refusal of food for eight days, and of water for four; escape from the house, choosing the very cold air outside; *death in eight days.* All the internal organs healthy, but a gangrenous abscess in the right thigh.

*Expts. 28, 29, 30, 31, 32, 33.*—Successive injections of pus; all fatal.

*Expt. 34.*—Injection of 75 grains of the serum of filtered pus, repeated four times. Death on the fifth day, with metastatic abscesses; animal in good health till nineteen hours before death.

*Expt. 37.*—Dog 23 lbs., 150 grains of filtered serum from the pus of a carious bone of the leg; second and third injection; great feebleness; death on the third day, without metastatic abscess.

*Expt. 38.*—Dog 40 lbs.; injection of serum of laudable pus 150 grains—no effect. The same serum on second day injected in the same quantity—no effect. Third day slightly foetid, same quantity; animal feeble, raised himself with difficulty. Fourth day, two injections of 75 grains, now foetid. Death eight hours after the last. No abscesses, but hard knots in the lungs.

*Expt. 41.*—Successive injections of the filtered serum of pus from empyema; suppurative phlebitis; metastatic abscesses; hæmatorax; death on the eighth day.

*Expt.*—Injection of 2500 grains of serum filtered pus, the pus of a lumbar abscess—no effect.

*Expt. 44.*—Dog 10 lbs. Injection of 45 grains of the globules of pus from an abscess in the arm, drawn the same day and kept at zero. Death on the third day—refusal of food; thirst; vomitings; feebleness; prolonged chills; tremblings; inflammation of the left eyelid, and of the cornea; ecchymotic spots in the lungs, but no abscesses.

The import of these experiments, and their relation to the disease we are considering, hardly require comment, especially when it is remembered that the uterine cavity is open to the ready access of air; that when inflammation has been recognized on its inner surface, it has often been of a character most likely to furnish a septic agent; and that the veins of the uterus are, after parturition, so arranged as to receive, either directly or secondarily, such septic agent, healthy or degenerated pus, in an augmenting and consequently accumulative stream.

Further on, Dr. Clark said, he might have occasion to remark on one or two of the other positions taken by Dr. Barker. It was sufficient for the present to say that the only question of importance on which they differed was—whatever might be the poisonous influence which produce the disease; foul air of an ill-ventilated or over-crowded apartment; the contagious principle given off by the sick person; the contamination of erysipelas; or, septic poison from a dead body, operating on the peculiar susceptibilities of the puerperal state;—whether puerperal fever, however produced, is really ever fatal before inflammation of some sort is developed, or without the concurrent agency of such inflammation. The argument of Dr. Barker had not convinced him that the ground he had taken at an early stage of this discussion was not defensible; and he again submitted to the Academy,

to be tested by their future, not by their past experience, whether the form of puerperal fever, heretofore regarded as fatal without demonstrable lesion, is not *the fever with endometritis*, and consequent pyæmia or septico-pyæmia.

In turning to the treatment of puerperal fever, Dr. Clark said, he was aware that he was expected to speak, not of the treatment in general, nor of the different modes of treatment adopted by physicians, but of the effects of opium. This would be the scope of his remarks, with only such additions as his observation had enabled him to make of the effects of *veratrum viride* and of one or two other agents. To show how his mind was led to rely on opium as a remedy in this disease, he would ask the indulgence of the Academy, while he recited the history of the exclusive opium treatment in simple and traumatic peritonitis.

The treatment of ordinary peritonitis, for which the graduates of the College of Physicians and Surgeons, and the pupils of the New York Hospital, have the sanction of those institutions, to as late a date as 1836, and probably till several years after that time, consists in bleeding, leeching, and the use of calomel and opium; the calomel, given with the view of affecting the system as promptly as possible, and the opium to retain the calomel, being given in grain and half grain doses. Indeed, these were the means relied on by nearly the whole profession. In 1841, however, visiting Woodstock, in Vermont, Dr. Clark met there Dr. B. R. Palmer and Dr. H. H. Childs, and he found that these gentlemen had become attached to Armstrong's method, as it is commonly called. He saw, with Dr. Palmer, patients treated in that way doing much better than on the more generally adopted plan. In the spring of 1841, '2 or '3, probably in one of the earlier years, talking of these cases, Dr. Clark suggested to Dr. Palmer that probably opium was the curative agent in peritonitis, and that the bleeding might be safely omitted, if the effects of the drug were steadily kept up. The next season, when they met, Dr. Clark was able to report an increased confidence in his suggestion, for he had tried opium alone, and had been successful. This statement he makes on the authority of Dr. Palmer, for in the lapse of years he had himself quite forgotten how the thought originated. From that time, neither he nor Dr. Palmer had bled a patient with this disease, and he remembers but one instance in his own practice in which leeches have been used; and Dr. Palmer is now in the habit of saying, that, with this treatment, peritonitis is no more formidable than a pneumonia. Up to 1850, Dr. Clark had treated eight cases success-

fully. In that year he saw his first unsuccessful case. The subject of the disease was a gentleman of some distinction, seen with Drs. Bulkley and J. M. Smith. In that case, however, it is proper to add, the disease probably gained much force, under the mask of a diarrhœa, before its true nature was recognized. Since that time he has lost but two in private practice—one in the practice of Dr. Gilman, and one in that of Dr. McNulty. In the first of these, there were some grounds for suspecting perforation, and in the second that accident was demonstrated after death. In the hospital there has, perhaps, been one death from the same cause in that period.

It was not till he had tried the opium in puerperal peritonitis that he became aware that his experience was but a confirmation of earlier observations ; but it soothes his vanity somewhat, that among the many physicians here and elsewhere who talked about and adopted the treatment, there were none who, at that time, could enlighten his ignorance. The report of what Drs. Graves and Stokes had done, in the fifth volume of the Dublin Hospital Reports, had either not been seen by New York physicians, or had attracted but little attention, and had been forgotten. It is certain that the suggestions of Drs. Graves and Stokes were not adopted by the profession here, and, so far as is known, had not influenced the opinions of any practitioner in the city. In Dr. Graves's "Clinical Lectures," by Neligan, (p. 244, vol. ii,) the following passage occurs : "The first case in which I used opium in peritonitis, occurred in 1822, in the old Meath Hospital. It was that of a woman in whom the inflammation set in after the operation of tapping for dropsy. The case seemed so hopeless, and the sufferings of the patient so intense, that I was induced to order opium for her in large doses. She also got wine. To my astonishment, she recovered. I afterwards published with Dr. Stokes our conjoined experience of the efficacy of this plan of treatment, in the fifth volume of the Dublin Hospital Reports." He adds, and the addition has a certain degree of significance: "The use of opium, in the form of peritonitis then described, is almost universally adopted," (that is, almost universally in Ireland.) Dr. Graves, then, did not propose opium as a remedy for *peritonitis*, but for peritonitis of a particular form.

The following extracts from Armstrong's Lectures will explain his plan of using opium : 1. "The first and main remedy is blood-letting, carried to approaching syncope." 2. "As long as the tongue continues moist, opium with blood-letting may be considered a sovereign remedy." "As soon as the patient recovers from the syncope,

give him, if an adult, three to five grains of opium." He goes on to say that, if in four hours the pain returns, the bleeding should be repeated, and the patient should take two grains of opium, *with calomel*; and if two hours later there is still pain, he directs still another bleeding, and one and a half or two grains of opium, *with calomel*. "The opium," he says, "tends to arrest the secretions of the liver, but when combined with calomel it has not that effect. Whenever, therefore, you repeat the opium, give calomel with it." The estimation in which Dr. Armstrong holds opium is emphatically announced in the following citation: "If I were subject, etc., and were only allowed to have opium or blood-letting, I would choose opium, though I would prefer both together."

Thus it appears that Graves proposed the use of opium for a particular form of peritonitis only, and Armstrong used it only as an auxiliary, though regarding it as rather the more benevolent agent among those he had chosen. It is not improper to add that the latter author startles our confidence a little, by a somewhat braggart air, and by figures that appear to us very large. He says: "I have treated nearly *three hundred* cases, with a success far greater than I have had from any other plan; and I could defy all the physicians of this country to show any more successful practice." Dr. Watson, in his Lectures, (Am. Ed., 1847, p. 737,) referring to the use of opium in peritonitis, says, that "A pamphlet was published some years ago, by Mr. Bates, of Sudbury, recording some striking cases of recovery from severe peritonitis, under large and frequent doses of opium, and a rigid adherence to the horizontal position." It is not stated whether bleeding was resorted to in those cases or not. But Dr. Watson is not convinced of the propriety of relying on opium, either by Mr. Bates's pamphlet, or by the cases of Drs. Graves and Stokes, which he reviews; for he says: "To sum up, then, *bleeding, and calomel, and opium* are to be resorted to for checking the inflammation." "The opium," he says, "allays pain, and perhaps relaxes spasm; *mercury tends to arrest the inflammatory action*." Dr. Clark presented the facts in this form, to secure for the opium treatment all the importance to which such independent and concurring observations should fairly entitle it.

But the history is not yet concluded, for, said Dr. Clark, if I may not claim for myself the priority of the discovery, by just so much as I esteem it useful, I am happy to be able still to claim it for my country. To you, sir, [addressing the president,] our acknowledgments are due for having preserved on record the fact that the late



Dr. Wright Post, of this city, used this *magnum donum Dei*, to combat inflammations, before either of the physicians whose authority is now so often quoted. Dr. Post, it seems, used opium in large doses "for its paralyzing influence over disease" of an inflammatory character, as early as 1804, and for enteritis in 1810, perhaps considerably earlier; for he seems to have been familiar with its use at that date. This pamphlet was published in 1829, before I was myself a student of medicine, and I became indebted to Dr. Van Buren, two or three years ago, for my first opportunity of perusing it. It is entitled a "Biographical Memoir of Wright Post, M.D., late Professor of Anatomy, etc., by Valentine Mott, M.D.," etc.; and contains a letter from Dr. F. G. King, addressed to the author, which details these facts. It is worthy of republication at this time, when the virtues of opium are undergoing renewed investigation.\*

The details of this opium treatment of peritonitis are so nearly identical with those of the same treatment applied to puerperal fever, that the management of the two diseases can be most conveniently spoken of together; and the hour being far advanced, it is better that both be postponed till another occasion. It is, perhaps, proper to say in closing, and in anticipation of what is to be said hereafter, that my confidence in the opium treatment of puerperal fever, with peritoneal complication, is in no degree shaken by accumulating experience, but is rather increased; while its usefulness in that form of the disease which is attended by purulent infection, has not been demonstrated, at least, as an exclusive method.

NEW YORK, Feb. 5th, 1829.

MY DEAR SIR,

In reply to your inquiries as to the use of anodynes and opium by the late Dr. Post, I have to remark, that in conversation with him some two years past, relative to Dr. Armstrong's practice in inflammatory diseases, he told me that the use of opium, as recommended by that gentleman, (except in *larger doses*,) was corroborated by his own experience for a long series of years, and that to him it was by no means a novelty; for that, in 1804, he was called to a child about three years of age, suffering under a violent pneumonic attack, accompanied by pain, cough, and febrile excitement. That he accordingly bled, blistered and evacuated the patient, afterwards placing him under the use of antimonials, but all without benefit. Matters proceeded from bad to worse, until the child, exhausted by constant cough and excessive restlessness, seemed nearly at the point of death. Un-

\* See Dr. King's Letter to Dr. Mott.



der these circumstances, he determined to quiet all these irritating symptoms by a powerful anodyne, and accordingly exhibited 60 drops of laudanum. Two hours after, he was called to the child, then supposed by its parents to be dying. He found the features sunken, the surface covered with a cold clammy sweat, and secretions of an unpleasant appearance about the eyes and nostrils, but the pulse had diminished in frequency, and was more full; the respiration was slower, and everything indicated the full and desired action of the anodyne. The parents were astonished to hear the physician say that the child would soon be better. The next morning all untoward symptoms had subsided, and the child became rapidly convalescent and recovered.

This was his first trial of anodynes in such affections; his *experiment*, if you please; but a few months afterwards, a similar case occurring, he immediately resorted to the anodyne; depletion and evacuants having been premised, and with similar success, since which period he has generally continued that mode of practice; latterly, however, substituting the Dover's powder in place of laudanum, in pneumonic attacks.

In 1810, he was called in consultation upon a gentleman in Jersey, suffering under enteritis. He found that he had been repeatedly bled, blistered and evacuated, but to no advantage; the pain still continued acute; the pulse was small, frequent and corded; the skin dry and hot. Under these circumstances he suggested the propriety of exhibiting a powerful anodyne, in order to quiet all irritation, and give nature an opportunity of recovering herself. After a little hesitation on the part of the attending physician, it was finally determined to adopt the course proposed, and 100 drops of laudanum were directed; an hour elapsed—no sensible effect having been produced, when the *dose was repeated*, and in half an hour the patient was under its full influence. He awoke the next day free from pain or tenderness, and so recovered. The same gentleman has been frequently attacked since with the same affection, and uniformly after being bled and evacuated, he has recourse to his anodyne, which rarely fails to quell the disease. But to be efficacious, the dose must be *heroic*, at least such was the opinion of Dr. Post, who often remarked that practitioners, especially in England and France, were not aware of the value of opium in inflammatory diseases, for even when employing it in such cases, their doses were too trivial to exert any marked influence over the malady. He himself always exhibited it under the opinion, that to obtain its soothing effect upon the system, and its *paralyzing* influence over the disease, it must be given in large doses. In diarrhoea and certain con-

ditions of dysentery, after having cleansed the passages, he employed laudanum or Dover's powder with the happiest effect; in fact, he rarely used much else than salts and Dover's power in diarrhoea, in adults. In his own case he was no less prodigal of anodynes than with his patients. Being, as you well know, for many years a constant prey to pleuritic affections, his treatment of himself was short and efficacious, viz., blisters and purgatives, followed by 80 or 100 drops of laudanum, which quieted his cough—allayed pain, and soon placed him in condition to resume his business.

In conclusion, permit me to state an occurrence which took place under my own eyes, two years previous to his death. He was then violently attacked with pleurisy, accompanied with much fever, for which he had been purged and blistered, and at the period in question was under the use of antimonials. At this time he directed me to give him 70 drops of laudanum. I remonstrated, directing his attention to the dryness of his skin, its increased heat, and the frequency and hardness of his pulse. His answer was, "Believe in my experience rather than in your theory; give me 70 or 80 drops of laudanum, and an hour will convince you of its propriety." It was given, and within the hour his pulse became calm, full and slow; his skin was covered with a gentle perspiration, and his condition strikingly improved. He left his bed the next day, and frequently since has he said to me, "I think I have given you a clinical lecture that you will remember."

Such, my dear sir, are the facts concerning which we some time since conversed, and if they can be of any service to you, employ them as you think proper.

Yours truly,

F. G. KING.

To V. Mott, M.D.

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### HOSPITAL REPORTS.

#### *Bellevue Hospital.*

The course of clinical instruction at this institution was continued during the months of December and January. In the Lying-in Department there were 40 births during the month of December, including a case of twins. There were four cases requiring the interference of art to accomplish the delivery. Of this number there were two cases of breech presentation, and one in which the face presented. About the middle of the month puerperal fever made its appearance, and notwithstanding the utmost vigilance and care on the part of the medi-

cal attendants to prevent its progress, by isolating the cases, many were attacked, and four mothers fell victims to this malady.

The general plan of treatment was the exhibition of the sulphate of morphia, and the tincture of veratrum viride, the former in doses of  $\frac{1}{8}$  to  $\frac{1}{4}$  of a gr., and of the latter 5 to 10 drops, every hour or two hours, according to the severity of the symptoms and the frequency of the pulse. Attention was given to the condition of the bowels, which were kept open by refrigerant and saline laxatives or by enemata.

The suppression of the lochia was treated by warm fomentations to the vulvæ, and the abdominal tenderness by turpentine stupes.

The preceding is an outline of the general management of the cases.

The results from this treatment were, in most of the cases, highly satisfactory.

Dr. Isaac E. Taylor was visiting physician for the month of December.

In January, up to the 21st, there were twenty-five births; one case of triplets; they were all male children, and born alive, though they were small and premature, and all died within a few days after birth.

There was one case of ruptured uterus, which terminated fatally thirty-six hours after delivery. This occurred in a primipara, aged 18 years, of small pelvis, the antero-posterior diameter of the superior strait being rather less than 3 inches.

It was necessary to apply the forceps to terminate the protracted and severe labor.

On post-mortem examination of the uterus, there was found an opening, as Dr. Elliot remarked, about the size of a waistcoat button-hole, on the posterior wall of the uterus. This opening was caused by the uterine contractions forcing the posterior wall before the head of the fœtus and against the (in this case, an unusually) sharp promontory of the sacrum. Consequently, this lesion, though having the same result, could not properly be called a rupture of the uterus, but an opening caused by the mechanical force dividing or destroying the tissue intervening between the head of the child and the prominence of the sacrum, in the same manner as vesico-vaginal fistulæ are caused by pressure against the pubis. Dr. Geo. T. Elliot was visiting physician for the month of January.

During the month of December there were two cases of traumatic tetanus, both of which terminated fatally.

The new operating amphitheatre was opened the 16th of last month. About 400 medical gentlemen and students were present. Dr. Jas.

R. Wood, previous to commencing the operations, gave a succinct and interesting account of the comparative condition of Bellevue Hospital at the present time, with what it was but a few years since.

From a dilapidated Almshouse, it has become one of the finest hospitals in the country; so that now it is truly an honor to be connected with it. The new Theatre seemed to give universal satisfaction. It is well lighted, and the operating table is in full view from every part of the room.

Dr. Wood tied the femoral artery for popliteal aneurism. The aneurism was of but six weeks' growth, and yet it had attained a large size, and had caused the patient intense pain for the week previous to the operation. No anæsthetic was given, and the artery was promptly exposed and ligatured.

Dr. W. also removed the sequestra from a diseased tibia, and an epithelial cancer from the chest of a man. On the 23rd ult., he operated on a necrosis of the os frontis, a fistula-in-ano, and a hydrocele.

A patient, (a lad 16 years old,) affected with Pott's disease, was also exhibited. He had been under treatment for some time, wearing Dr. H. G. Davis' apparatus, the effect of which was to render the spinal column capable of bearing the body erect, throwing the weight upon the oblique and transverse processes of the vertebræ, permitting free respiration and full movement of the chest. The result was evident in the good figure and improved general condition of the health, the patient having gained 20 pounds.

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#### *Clinical Records.*

*Report of Cases occurring in Bellevue Hospital under the care of Dr. James R. Wood, Visiting Surgeon, Dr. J. J. Campbell, House Surgeon. Reported by J. M. FARRINGTON, M.D., Assistant Surgeon.*

1. *Fracture of Vertebra—Paraplegia—Death.* Sarah T., aged 30, of good constitution, was admitted in hospital October 13th, 1857.

One week previous to admission, while standing on a step-ladder some six feet from the ground, she slipped and fell, striking on her feet. She sank down, and from that moment there was entire paralysis of both motion and sensation in the lower extremities. The feces passed involuntarily, and the catheter was used to relieve the bladder, although a small amount of urine was constantly passing involuntarily. During the last three days of her life there was but little urine secreted.

On inspection of the spinal column no marked displacement of the vertebræ could be detected. A small point of abrasion, about the size of a half dime, was noticed over the sacrum at the time of her admission; this gradually increased in size. She suffered very much, and continued to sink after admission. Nourishing diet, tonics, stimulants and anodynes were administered, but she grew more and more feeble, and died on the 28th.

*Autopsy*, 48 hours after death. Almost the whole of the posterior surface of the sacrum was exposed from the sloughing of the bed-sore above mentioned.

There was a comminuted fracture of the body and transverse fracture of the 9th dorsal vertebra, causing compression of the spinal cord.

2. *Injury of Spine—Paraplegia—Recovery.* Owen D., aged 47, of good constitution, was admitted into the hospital September 26th, 1857.

A few hours previous to admission he fell backwards down a hatch-way on a canal boat, falling some ten feet and striking on his back. He was picked up in a state of insensibility, and remained unconscious for about 30 minutes. Paraplegia was perfect; there was no sensation nor power of motion in the lower extremities. He had control over the rectum, but not over the bladder. The bowels were sluggish, requiring a frequent use of laxatives. There was paralysis of the bladder, with retention of the urine, requiring a constant use of the catheter for 3 or 4 days, after which it became necessary to use it only occasionally when he permitted the bladder to become distended. He soon learned to be cautious and attend early and frequently to emptying this viscus.

His treatment at first was tonic for the general system and counter irritants over the lumbar region, the seat of the injury. Dry cupping and blisters were repeatedly employed, and afforded him marked relief from the pain. He suffered most from coldness of the lower extremities, and they were enveloped in blankets and gentle friction employed over them. About a month after admission he was put upon small doses of the extract of *nux vomica*. This was continued with marked benefit for two months. The galvanic battery was then employed to the limbs.

His improvement has been slow but constant, and he now (January, 1858,) is able to walk about the room, though his knees, he says, are still weak.

3. *Injury of the Spinal Cord—Complete Paralysis—Recovery.* William B., aged 25, of good constitution, was admitted in hospital November 28th, 1857.

On the night of the 30th of June, 1857, he was attacked in the street and stabbed in the neck by a dirk knife. He fell down in a state of insensibility, and lay bleeding for some time. When he awoke to consciousness a surgeon was dressing the wound, who said it was 5½ inches in depth. The knife entered just behind the left ear, and penetrated the neck obliquely downward and backward towards the spine. The surgeon closed the external wound with a strap of adhesive plaster, and it healed in a few days.

There was at first complete paralysis of motion. He was not able to move either of his limbs. He, however, had control over the alvine excretions.

The character of the medicine administered he did not know, though at the expiration of three weeks after the injury, he noticed a gradual return of the power of motion on left side. The doctor said his right pupil was contracted, but his vision was perfect.

There was loss of sensation on the left side, but not on the right. It was not until August that he was able to go about. The galvanic battery was used to return motion to the right side.

Toward the latter part of July there was complete restoration of motion on the left side, but he never has had a full return of sensation to this side; "it has always been numb" since the injury.

He never had a perfect restoration of motion to the right side. He, however, was very much improved, and was getting along comfortably, when in October he "went to drinking" and became worse, and continued to grow worse until he entered the hospital.

He was quite crippled on admission. The partial paralysis of sensation on the left side, and of motion on the right, were well marked.

Counter irritants were applied to the nape of the neck, and the extract of *nux vomica* ordered in doses of one-third of a grain three times a day. He was directed to take a cold shower bath daily. The *nux vomica* has produced twitching of the left side, and now (January 20th, 1858,) it has begun to affect the right side also.

His improvement, though it has been slow, has been constant, and he is now in a very comfortable condition and able to attend to business.

4. *Injury of Spine—Complete Paralysis—Death.* Thomas C., aged 50, was admitted in hospital December 15th, 1857. On the evening of the 14th, while descending a flight of stairs, he slipped and fell down four steps, striking on his back.

He was not able to move after the fall, though he retained his consciousness. The paralysis was general and almost complete. He

could move his neck, though he had very little power of motion of the extremities. There was no loss of sensation.

He had but little control over the sphincters of the bladder and rectum, on admission, and a few days subsequently both the urine and fæces passed involuntarily. He was in a very feeble condition. Beef tea, milk punch, etc., were ordered. Dry cups were applied over the site of the injury, which was the cervical portion of the vertebral column, but all efforts for his relief proved unavailing; he gradually sank from exhaustion, bed-sores formed, and he died on the 9th of January.

A post-mortem examination of the body could not be obtained.

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#### CORRESPONDENCE.

*A Letter from DR. EVE to the Editors of the American Medical Monthly.*

NASHVILLE, TENN., December 22, 1857.

TO Drs. PARKER and DOUGLAS, Editors of *American Medical Monthly* of New York City.

GENTLEMEN:—In the December number of your journal, just received, you express regret for two things in the volume lately published for me by Messrs. Lippincott & Co., of Philadelphia. In regard to the first, my not confining my cases reported to Surgery, as editor, critic or friend, you have a perfect right to the opinion, and I make no complaint, for surely the flattering notices of the work by the medical press are quite satisfactory, and compensation enough for the twelve months' labor it cost in the compilation amidst my every-day business; but I am unwilling to submit to your decision about the manner in which you are pleased to state I have treated the question of priority among authors.

The first instance of the second cause of regret to which you refer, that of your colleague, Professor Carnochan's claim in removing the entire lower jaw. "The Collection of Remarkable Cases in Surgery" was issued in Philadelphia, under the supervision of Doctor, now Professor Gobrecht, of that city, who will testify to my mortification, when the proof-sheets reached Nashville, at the unpleasant error of giving credit to Dr. Carnochan, of New York, for Dr. Deaderick's case. Case III corrected, is the resection of part of the lower jaw, by Dr. Deaderick, of Athens, Tennessee, and not as published—amputation



of the entire lower jaw, by Professor Carnochan. The two short paragraphs following Case III, belong to Case IV, as its introduction. On page 143, 16 and 17 lines from its bottom, "The fullest and most satisfactory account of the complete disarticulation of both sides of the lower jaw," is credited in these words to Dr. Carnochan. May I not hope, with this explanation, that the friends of the Doctor will be satisfied I had no intention of doing him injustice?

You say "it would have been wise to be carefully distinct in such a matter," and I am charged with an attempt to injure your friend and colleague in New York City, by sustaining a Tennessean's claim to priority in operating upon the inferior maxillary bone, when the fact is, credit by error in my book was given to the former for work done by the latter. Would not the friends and heirs (for he has just died,) of Deaderick have had a greater reason to complain of me for the entire omission of his name in reporting his own case, and presenting that of another instead, as having performed the operation, than you could possibly have?—and yet they have done nothing of the kind. Thus, instead of attempting to deprive your friend of honor, he unintentionally has, by the printer, been made to receive the title of a case belonging to another, and this the first operation confessedly ever performed on the lower jaw, so far as a resection of this bone is concerned; and yet I am charged with annoying and doing injustice to Dr. Carnochan.

The other instance you point out and declare I claim for Dr. McCreary, of Kentucky, priority over Dr. Mott in removing the entire clavicle. I am charged by you with attempting to snatch laurels from the brow of one man and failing to place them upon the head of another. You say that I refer to a paper of Dr. Johnson, "and it would have been only *fair* to have reprinted it." Well, gentlemen, this is just what I have done, and nothing else. I have but *republished the case*, stated my authority for it, given full credit for it to the New Orleans Medical and Surgical Journal, and added not one word or made a single comment. Examine the book again—may be you have condemned too hastily.

Twenty years ago I expressed the opinion in the *Southern Medical and Surgical Journal*, published still at Augusta, Ga., that Dr. Valentine Mott was the greatest of living surgeons, and have had no cause or reason since to change it. As an operator, I doubt if ever he had an equal, and you will permit me to add, that from watching the progress of your colleague during the past ten years, I know no one so likely to become his successor as the present Professor of Surgery in the New York Medical College.

Born in the South, educated in the North, and now a resident of the West, I love too well my profession to knowingly do injustice to a professional brother, much less annoy one, and, as would be the case in the present instance, a warm personal friend. Admitting the error in the volume, which was beyond my power to prevent, I know I have attempted in it to be careful of the rights of others, but may not boast of being wise. Very respectfully, yours,

PAUL F. EVE.

NEW YORK, Jan. 23, 1857.

To Dr. PAUL F. EVE, *Prof. of Surgery in the University of Nashville.*

SIR—In reply to your letter to us concerning the notice of your "Collection of Remarkable Cases in Surgery," we beg leave to say, that as to the first part of the review, it expresses sufficiently our reviewer's opinion, and upon that point you and he must agree to differ. We are sure, however, that you would be the last man to desire any reviewer to refrain from expressing his opinion, simply because others, and perhaps a majority, differed from him.

In respect of the instances of questioned priority, your explanation must, of course, set you right, and we reprint it in the MONTHLY with a great deal of pleasure. But how was our reviewer to know that there was such an unusual misplacement and transposition of sentences as occur in the first case. In the book, it reads distinctly, on p. 142, "Case III. Amputation of the entire lower jaw. By J. M. Carnochan, M.D., &c.," and the first three subsequent paragraphs are as follows:

For the first time, as was supposed, this formidable operation, excision of the entire inferior maxillary, with disarticulation of both condyles, was performed by Dr. Carnochan, Surgeon to the New York Emigrants' Hospital, in July, 1851.

This claim on the part of Dr. Carnochan has been denied him, particularly by Prof. Blackman, of Cincinnati, who, in the fourth edition of *Velpeau's Surgery*, by Mott and himself, asserts that McClellan, Stanley, Ganwesky, Heyfelder, Perry, Maisonneuve, Pitha, Cusack, Syme, Ackley, Signoroni, Walther, &c., have each done the same thing.

We regret to find that one so well versed in surgical literature as the author of this article is known to be, *ignores* the deeds of his own countryman, the backwoods Tennessean, Dr. Deaderick, of Athens, formerly of Rogersville, in this State, and gives the credit of the first methodical operation on the lower jaw to Dupuytren, of Paris. Dr. Mott, Mr. South, Dr. Blackman, Dr. Smith, successor to Dr. Gibson, each cheerfully concede priority of this operation to Dr. Deaderick. We are pleased to have it in our power to present a letter, never before published, respecting these claims, from the Doctor himself, and kindly furnished us by our friend, Dr. Avent, of Murfreesboro. The profession will now be able to decide the question: To whom does the honor belong of first operating upon the lower jaw?

Now, we respectfully submit, that it is impossible for any one reading the book, without the information contained in your letter, to come to any other conclusion than that of our reviewer, viz., that the "one so well versed in surgical literature" was Dr. Carnochan.

Since receiving your letter, we have looked carefully through the volume to find some correction of this mistake, supposing there would be one, since you noticed it in the *proof-sheets*. We confess we are disappointed in not finding one, but only an allusion in the preface to the comparative freedom of the volume from errors. Would it not have been wiser (excuse us if we use the word of the reviewer,) to have inserted so important a correction even in the preface?

On one point we beg leave to correct you. Neither of us is now a colleague of Prof. Carnochan, and friendship for him was not the reason of our reviewer's calling attention to this thing. Justice seemed to demand it, and Dr. C. was not even consulted in the matter.

With regard to the claim of Dr. McCreary, it is evident that the reviewer entirely misapprehended the statement. He and every one else to whom it was shown, among whom was Dr. Mott himself, understood all but the title to be your own words, and in that view of the case his expressions seemed moderate and proper. It is worth while to add, that at the request of Dr. Mott the notice of the book was withheld a month, that he might have time to communicate with you, and your reply to his letter did not suggest the idea that the view taken was erroneous.

It is true, no one could understand how you should thus speak of Dr. Mott, but the types seemed to make you. We do not see how such a mistake could be avoided by the reviewer; and on our part, every precaution was taken against it, even to submitting the proof to Dr. Mott.

We beg leave to subscribe ourselves, with great respect,

Your obedient servants,

EDWARD H. PARKER, M.D.,

J. H. DOUGLAS, M.D.,

*Editors of the American Medical Monthly.*

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PARIS, January 12th, 1858.

TO DRS. PARKER & DOUGLAS, *Editors American Medical Monthly, N. Y.*

In accordance with the resolution of the Society, I transmit to you the accompanying letter, requesting its insertion in your Journal.

I am, sirs, with great respect, yours truly,

BENJ'N LEE, *Cor. Sec'y.*

HALL OF THE AMERICAN MEDICAL SOCIETY, IN PARIS,  
January 12th, 1858.

*To the Editors of Medical Journals and Periodicals in the United States:*

GENTLEMEN—It is now upwards of six years since a number of American physicians, in Paris, united to form an Association, under the title of the "American Medical Society, in Paris.

Under Article II of the Constitution, which was then adopted, entitled "of the objects," the first and third clauses read as follows:

"The objects of this Society shall be,

"1st. The formation of a Library, especially of American medical literature, which shall be freely open to the scientific men of every country.

"3d. The diffusion of American contributions to medical science."

The Society was early impressed with the fact, which is apparent at the first glance, that the most important means for facilitating the accomplishment of these objects, the extreme utility of which cannot be doubted, was the regular reception by it of the Journals and Periodicals wherein the daily progress of medical science in the United States is chronicled.

Owing, however, to the peculiarly and necessarily variable character of its numbers and resources, its members felt unwilling to impose upon those who should follow them, and who might find the Society in a much less flourishing condition than it was, so heavy a responsibility as the subscription to even a small proportion of the scientific journals of the United States would entail. They therefore, through their Corresponding Secretary, made an appeal to the editors of such publications in America, to furnish to them, free of expense, the respective journals which they conduct.

This appeal, doubtless, in view of the national character of the undertaking, met with a prompt and generous response, and for a time the table of the Society was well supplied with American publications. These, however, have gradually been discontinued, until at present there are but two which are regularly received.

Being fully aware that this discontinuance of your favors is owing to the fact that the existence and importance of the Society have not been sufficiently kept before the eyes of the profession at home, and relying upon your already experienced generosity, as well as in view of the fact that valuable periodicals are now in successful operation which were not in existence at the time of this first appeal, the Society, at present, earnestly resolved to do all in its power to fulfil the designs of its founders, has instructed its Corresponding Secretary to

renew the request, and to forward it to five of the prominent Journals in the United States, requesting its insertion. Gentlemen wishing to accord this favor, will please to forward their Journals to Mr. Paul Bossange, 20 Beekman Street, New York, who has generously offered to transmit, free of expense, all books and papers intended for the Society.

BENJAMIN LEE, M.D., *Corresponding Secretary.*

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### EDITORIAL AND MISCELLANEOUS.

In France, people go to the Courts of Law as they do the Theatre, to witness the dramatic display. Here, the simple surroundings of our republican judges deprive the court of much of that scenic effect which lends such important aid in monarchical countries.

The cases, however, which are brought up for adjudication are none the less *célèbres* for the lack of this, but will rival those occurring in the courts of England and France, in their tragical character, the great talent and forensic ability enlisted, and in their sometimes farcical termination.

Insanity has always been a favorite plea for the defence in cases of desperation, and oftentimes with success. This will account for the frequency with which it has been brought forward by able advocates. Its signal failure, however, in some recent particular instances, has naturally turned the current of popular opinion against it, and for a few months past, instead of trying to prove everybody who had made themselves amenable to the laws of the State, insane, the courts have been busy in taking evidence to prove that many who are confined in Lunatic Asylums are wrongfully and illegally detained.

A recent case of this kind, that of Miss Wolfsohn, created for a while considerable excitement, but the incontestable evidences of insanity which she exhibited before the court non-plussed the matron of the Asylum, who had testified that she was not insane, and put a learned expert with his vast experience of 800 cases of insanity completely *hors de combat*. We can learn two things from this result: that there may be a motive, not always a philanthropic one, in such a proceeding, which never reaches the ear of the public; and that an experience of 800 cases does not alone constitute a man an expert.

— At the meeting of the *American Association for the Advancement of Science*, held in Montreal during the month of August, an invitation was accepted to meet in the City of Baltimore on the 28th of April. The Hall of the Maryland Institute will be used for the sessions of the Association. We understand the Local Committee, (Hon. Thomas

Swann, Mayor of the city, *Chairman*, and Prof. Lewis H. Steiner, M. D., *Local Secretary*,) have already initiated their plans for the accommodation and reception of the Association. As this meeting will be during the week previous to the meeting of the American Medical Association at Washington, D. C., it will be very convenient for medical men to attend both, and contribute thus to the annual fraternization of the members of these two great Associations.

*Puffing One Hundred Years Ago.* An amusing and instructive article, with the title "How they went by road and how they go by Rail," in the London *Athenæum* for October, contains an account of the annoyances which were invariable on visiting Bath. The visitors were met at the entrance to the city by a class of touters, who were representatives of the physicians resident in the place. Every visitor, by whatever vehicle he reached Bath, was supposed to be more or less in need of medical advice, and the physician or surgeon was ready to take possession of him, adopting the initiative too, in order to accomplish that for which he was prepared. Accordingly, travellers were beset by shabby-genteel men, with cards in their hands, each recommending his own master, extolling his skill, delicacy, and moderate charges, while he denounced his rivals as extortioners, dunces, and slayers of all kinds." This was the method adopted by quacks in 1757, before printing gave them the great advantages possessed now, of intruding upon a man's privacy and pushing their claims to attention there. The same spirit is seen, however, in the effect to denounce their rivals in 1757, as is manifest at the present time with this class; its members are always the same, whether as unlearned dunces, or faithless professors who have remained faithless *so long* as such a cause seemed to be one of profit and pecuniary reward.

—Syphilization, which is now a growing innovation, receives a support from India, as we learn from a letter from M. Guepin, of Nantes, to Dr. Caffé.

Syphilization is practised in certain parts of India upon a great scale, as a preventive as well as a curative means. The prostitutes of India often offer to syphilize our sailors, but these always refuse, unwilling to submit to any means not employed in Europe. The marine officer who gave me this information had the curiosity to see some of the women who offered to syphilize his sailors, and did not observe upon their bodies any disease of the skin, nor any cicatrix of a bubo. This fact is the more important, because he did not know that syphilization had been reinvented in France, practised with success in both Turin and Christiana, and also for the reason that syphilitic diseases contracted in India are excessively severe; those affected with it very often die, or are cured very slowly, after being subjected to the ablest, the most methodical and energetic treatment.